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Plants, or Their Principles?

MEDICINE began with ignorance, and its daughter superstition. From the time when the sick applied to the temples of the gods for relief and received the assurance of the priests' intercession, plus a package of drugs, the conception of medical intervention has been based on this combination. Faith in the mysterious, incomprehensible powers of the man who stood between the people and their gods shared the public faith in the no-less uncomprehended agencies he utilized.

This faith in the mysterious, the unknown in drugs is to this day shared by laity and doctor alike. It is instinctive, in that it is rooted in the nature of man. That human imagination that peopled the forests, mountains, streams, clouds with supernatural existences will not be satisfied with dull prosaic known facts, but refuses to dispeople the vasts beyond the ken of the human mind.

Remember the charm you found in "Lavengro," that strange tale of gypsy Borrow? We hope you were spared the rude bump to earth received from the trivial, commonplace explanations of "The Romany Rye." When the early therapeutic materialists declared that the virtues of the famed Epsom water were merely those of its content of magnesium sulphate, there was an outcry of protest with which the public and the profession sympathized—there was something in the waters above and beyond their principal mineral educt; and the benefits derived from drinking this healing outflow from nature's alembic were *not* mere saline laxation! Passionately men clung to the mysterious and refused to bound their faith by the trite Common Known.

So, when the galenist makes his appeal for the crude-plant preparations, as against the active principles on which their therapeutic efficacy depends, he does far more than put in a plea for the tinctures: he appeals to one of the most deeply rooted instincts of the human heart.

We want to believe in the realm beyond sense and reason; we must, and will, believe in it. "It must be so. Plato, thou reasonest well." And, so, we enthrone the noble Athenian as the exponent of the highest possibility of human thought, while Lucretius is unknown. Why? Read his discussion of immortality; note the merciless logic with which he demolished the hypotheses, the analogies, the baseless argumentations, and seeks to prove what every sane mind refuses to believe—small wonder that Lucretius is ignored.

Now, please, friends, don't put me down as a follower of Lucretius. I think his name should be bracketed with those of Pythagoras, Plato, Aristotle, Avicenna, Darwin, and Lecky; but, while admiring his lofty intellect and standing amazed at his insight at that early age, I am not in the slightest degree convinced by his arguments or won to his beliefs.

Objections raised against generalities are favorite arguments, because much may be said on both sides. Thus, for instance, is it just to base the use of alkaloids on indications furnished by uses of the whole plant? Yes—and no. When the whole plant has been used for a specific purpose with effects dependent directly upon the alkaloid, the latter will do the work more quickly, better, more surely. Instance: When opium is given to relieve pain and induce sleep, morphine will do this better. On the other hand, tell us, please, for what purpose you would prefer opium to morphine?

As to gelsemium, with its varying content and proportions of two antagonistic alkaloids, this priceless remedy was never lifted out of the obscurity of quasi-domestic practice until the separation of gelseminine made possible the demonstration of the real values inherent in this plant.

As to nux vomica and ignatia, I deny that ignatia ever filled an appreciable place in medical practice; or that one hundred American doctors outside of sectarians ever used it habitually in their practice. If I am wrong, I hail from Missouri! Will any doctor who has been prescribing ignatia as well as nux vomica and is prepared to make and defend his choice between them, please write and tell me?

"O, surely!" you will say, "ignatia is a better tonic, just as *you* say nux vomica is a better tonic than strychnine."

But do you really know this, or do you think you know it, or have you read or heard it? Come down to dots. I also am able to reason; so, give us some definite facts upon which to reason.

The matter goes deeper—very much deeper than whether we should prefer the drug tinctures or their alkaloids. It really means: Has the science of medicine progressed so far that we can apply drugs intelligently? This is possible only, as I have many times stated, with three prerequisites, namely:

We must recognize a deviation from health.

We must know what drug will obviate this deviation.

We must administer the selected drug until physiologic balance shall have been reestablished.

Without these, we must fall back upon the primary statement, that the selection of drugs rests upon the empiric basis of practical experience. That means, we give the medicine, and the patient gets well; but how it acts, what it does, why he gets well, of all this we are blissfully ignorant and content to remain so.

High hearts are never long without hearing some new call, some distant clarion, even in their dreams; and soon they are observed to break up the camp of ease, and start on some fresh march. And, looking higher still, we find those who never wait till their moral work accumulates, and who reward resolution with no rest; who do the good only to see the better, and see the better only to achieve it.—James Martineau.

THE HARRISON ANTINARCOTIC BILL WHICH TAKES EFFECT MARCH 1: A DIGEST AND EXPLANATION

As we stated in these pages last month, the Harrison Antinarcotic Bill (H. R. 6282) was finally passed by Congress, and received the approval of President Wilson upon December 17, 1914. As provided, this bill will go into effect on March 1, 1915. In order that readers of CLINICAL MEDICINE may be thoroughly familiar with the provisions of the Act and know exactly what they must do (and what they cannot do) to comply with it, we submit herewith a brief digest and explanation. The information presented is based to some extent upon regulations now being drafted by the officials of the Treasury Department. It should be understood, however, that these regulations have not been definitely determined upon and are subject to revision. Should there be any changes affecting the accuracy of this explanation, they will be presented to our readers next month.

Who Are Affected by the Law.—"Every person who produces, imports, manufactures, compounds, deals in, dispenses, sells, distributes or gives away opium or coca leaves or any compound, manufacture, salt, derivative, or preparation thereof." This includes every physician, dentist, veterinarian and pharmacist, all of whom are specifically mentioned in the law.

With What Narcotic Drugs Is This Law Concerned.—As stated above, this law affects the traffic in opium or coca leaves and "any compound, manufacture, salt, derivative or preparation thereof." However, there are

certain exemptions. Thus, decocainized coca leaves are exempt from the operation of the law; also (see Section 6), it is provided that "This Act shall not be construed to apply to the sale, distribution, giving away, dispensing, or possession of preparations and remedies which do not contain more than two grains of opium, or more than one-fourth of a grain of morphine, or more than one-eighth of a grain of heroin, or more than one grain of codeine, or any salt or derivative of any of them in one fluid ounce, or, if a solid or semisolid preparation, in one avoirdupois ounce; or to liniments, ointments, or other preparations which are prepared for external use only, except liniments, ointments, and other preparations which contain cocaine or any of its salts or alpha or beta eucaine or any of their salts or any synthetic substitute for them: *Provided*, That such remedies and preparations are sold, distributed, given away, dispensed, or possessed as medicines and not for the purpose of evading the intentions and provisions of this Act."

The effect of this exemption is to permit the sale by unregistered dealers of many socalled "patent" and "proprietary" medicines containing small quantities of opium and its derivatives. It also exempts at least one official preparation, i. e., camphorated tincture of opium (i. e., paregoric). This clause is of course a concession to the proprietary and retail drug interests. So far as we can discover, every tablet, pill, and granule, and most of the liquid preparations containing opium or its alkaloids, fall under the operations of the law, and every physician dispensing or prescribing them will be compelled to take out a license.

The License and How It Is Secured.—Every physician, dentist, veterinarian and pharmacist, whether he dispenses or prescribes, must take out a license from the National Government, for which he will pay $1.00. This license must be secured from the Collector of Internal Revenue in the district in which the applicant lives or does business. To secure this license, the applicant must fill out and submit to the Collector an application blank which said Collector will supply. In this blank the physician must state his name, location, and the character of his business or profession.

When the license is issued, the applicant will be given a registry number. It is expected that this number will be a permanent one, and that when the license is reissued, from year to year, the same number will go with it. Thus, John Jones, M. D., once registered as No. 456, will remain No. 456 throughout his life. He will be permanently identified with this registry number.

First Payment for License.—Inasmuch as the fiscal year of the Internal Revenue Bureau begins on July 1, it is presumed that the first payment for license will cover the period from March 1 to July 1. This would make the first expense for license approximately 34 cents; in that event, the license would have to be renewed upon July 1.

Order Blanks, and Routine to Be Followed in Ordering Drugs.—The law provides "That it shall be unlawful for any person to sell, barter, exchange, or give away any of the aforesaid drugs except in pursuance of a written order of the person to whom such article is sold, bartered, exchanged, or given, on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue. Every person who shall accept any such order, and in persuance thereof shall sell, barter, exchange, or give away any of the aforesaid drugs, shall preserve such order for a period of two years in such a way as to be readily accessible to inspection by any officer, agent, or employe of the Treasury Department duly authorized for that purpose, and the State, Territorial, District Municipal, and insular officials named in section five of this Act. Every person who shall give an order as herein provided to any other person for any of the aforesaid drugs shall, at or before the time of giving such order, make or cause to be made a duplicate thereof on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue, and in case of the acceptance of such order, shall preserve such duplicate for said period of two years in such a way as to be readily accessible to inspection by the officers, agents, employees, and officials hereinbefore mentioned." (Section 2.)

This means that every physician, dentist, veterinarian, pharmacist, or other dealer ordering from any person whatsoever, any of the narcotic drugs mentioned in this Act, must use in ordering them an official order blank, to be furnished by the Commissioner of Internal Revenue. These blanks will be furnished to the applicant by the local Collector of Internal Revenue. In order to secure them the doctor must make out a requisition blank which this official will supply.

The order blanks themselves must be purchased by the applicant (physician, dentist, veterinarian or pharmacist) and they will

cost $1.00 a hundred. They will be made in duplicate, the price being for the 100 originals, duplicate being on the same sheet, probably as a "stub." The law requires that *the buyer* must keep the duplicate blank on file in his office subject to official inspection for a term of two years; while *the seller* must keep the original blank on file subject to inspection for a similar period. It is expected that these order blanks will be stamped with the registry number of the purchaser.

How Does This Act Affect the Dispensing of Narcotic Drugs.—The law specifically provides that "nothing in this Act shall apply (a) to the dispensing and distribution of any of the aforesaid drugs to a patient by a physician, dentist or veterinary surgeon registered under this Act in the course of his professional practice only." There is, however, one restriction, as follows: "The physician, dentist or veterinary surgeon must keep a record of all such drugs dispensed or distributed, showing the amount dispensed or distributed, the date, and the name and address of the patient to whom such drugs are dispensed or distributed," *provided* he does not "personally attend" the patient for whom the drugs dispensed or distributed are designed. These records must be kept, subject to inspection, for a period of two years. There is no restriction on the possession and administration of narcotic drugs by the patient's nurse under the physician's direction.

This means that if a patient is actually under the personal care of the physician or veterinarian, the practitioner is not required to keep a record of the narcotic drugs used. On the other hand, if the patient is not under his direct personal care, that is, if the drugs are sent to this patient by mail or messenger after written, telephonic or telegraphic request, without prior actual personal attendance on the part of the physician, then such records must be kept; in other words, every physician doing a mail-order business, or trying to treat patients without actually seeing them, will be required to keep the full records required of all other dealers.

How the Bill Affects the Prescribing of Narcotic Drugs.—It is expected that each physician prescribing any of the drugs mentioned in this Act will be required to sign his name in full to the prescription, and also to write thereon his registry number and office location. It is also expected that the pharmacist will be required to use reasonable precautions to verify the identity of the persons named on the prescription, and to prevent the drugs specified falling into the hands of improper persons. Such prescriptions must be kept (it is expected) in a separate file, for a period of two years. Except on prescriptions written by registered physicians, dentists and veterinary surgeons, the pharmacist is not allowed to dispense any narcotics whatever, except those specifically exempted by the Act. (See paragraph: "*With What Narcotic Drugs is this Law Concerned.*")

Inventories of Narcotic Drugs.—It is presumed that the Government will require of every manufacturer, dealer and dispenser of these drugs, an inventory of the quantities of narcotics on hand at the time this law goes into operation. However, just what will be required in this connection, we are yet unable to state. We have understood that these inventories must be made by March 5; but full information will doubtless be given by the Government later. Physicians can make no mistake in putting in their stocks at once.

Penalties.—The penalties provided for the violation of this Act are very high. It is provided "That any person who violates or fails to comply with any of the requirements of this Act shall, on conviction, be fined not more than $2,000, or be imprisioned not more than five years, or both, in the discretion of the court."

This digest does not attempt to cover the Act in full, but only so much of it as may be of special importance to physicians at the present time. The requirements relative to importers, manufacturers and dealers are extremely rigid.

It will be apparent from the preceding that it will be impossible, or at least dangerous, for any physician, dentist or veterinarian to dispense or prescribe any of the narcotic drugs mentioned in this law after March 1, unless he has obtained a license and secured his registry number and order blanks. We therefore advise every physician to file with his local Collector of Internal Revenue, without delay, his application for license and his request for blanks. When convenient, such applications may be made personally, but if not convenient, they may be made by mail.

We shall endeavor to print elsewhere in this number of CLINICAL MEDICINE a list of the Collectors of Internal Revenue for the convenience of our readers.

If there are any questions regarding this law which our readers desire answered, we

hope that they will feel free to submit them to us.

By persisting in a habit of self-denial, we shall increase the inward powers of the mind, and shall produce that cheerfulness and greatness of spirit which will fit us for all good purposes; and shall not have lost pleasure, but changed it; the soul being then filled with its own intrinsic pleasures.—Henry More.

THE BUSINESS QUESTION AGAIN

I am still exercising my mind about the economic, or, if you prefer it, the business side of the doctor's work, wondering how he may improve his financial condition. As I have said before, I cannot do much in the way of offering any practical suggestion. For that, I must look to the men who are in the field, who have grappled hand to hand with the economic problem. And suggestions from the readers do not seem to come in very rapidly. It seems hard to break through the crust of convention and tradition and to get physicians to discuss this phase of their work with frankness. However, we print several good letters in this issue, and have others on hand.

I want to repeat what I said last month, that not only is it a perfectly legitimate and dignified side of the doctor's practice, but also an exceedingly vital one, this matter of "realizing" himself, of enhancing his value to his clientele, and then of cashing in this increased value.

I am not now speaking of the added value that comes of greater knowledge and higher skill. That belongs to the scientific side of his work. What I do mean is, the ability and the opportunity to market more extensively and profitably the knowledge and skill that he already possesses, at the same time that he is improving himself in these directions. I am convinced—I say it once more—that the general practitioner is not reaping, as he should, the economic harvest of his modern efficiency and advantages; and I want to know why he isn't and how he can be helped to do it.

Let no one be shocked at the use of that word "market." I know it isn't considered quite the thing in polite society to hint that the doctor has to do with any such vulgar thing as "marketing." The doctor does not sell wares; he renders services. And he does not ask people even to engage his services—he waits until they come to him. All of which may be very correct as a proposition in the theory of ethics; indeed, a large part of it holds good even as a matter of actual applied ethics. However, it is equally true, dear reader (I am speaking now, not in meeting, but eye to eye, face to face, man to man), that, in the last analysis, the doctor sells his services just as the merchant does his goods, and the patient buys them just as he buys the merchant's goods.

Now, carrying the analogy a little farther, every physician knows that, unless he does something else besides laying in stock in trade, in the shape of knowledge and equipment, and then just sitting down to wait for someone to come and buy, he is likely to sit for a long time, with ample leisure to contemplate the goods on the shelves. It matters not how able and well prepared a man may be, if he does not find some way of making connection between the demand for his services and the supply which he stands ready to furnish, his assets might as well be liabilities, indeed, they do become liabilities, for his very training unfits him for other kinds of work.

I do not mean to say, of course, that a physician should go out onto the street, collar the first prosperous-looking man he meets and say: "Get sick, you villain, and send for me, or I'll be the death of you." Neither would I suggest that he is to make a nice attractive display of his qualifications and armamentarium in some public place, for the possible seduction of susceptible patients, as the merchant is permitted to do with his wares in order to bait the passersby.

Nevertheless, as sure as you live, if the physician is to live at all, he is bound to exercise some sort of psychology as between himself and those whom he hopes to serve in their sickness, if he expects to realize upon his mental and professional capital. The fact that he is debarred from making any direct display or appeal renders the problem that much the more subtle and difficult; but it does not eliminate the problem *in esse*. It is not even limited to the economic—that is, the business—phase of the doctor's work, this psychological necessity. Without it, he cannot even develop to the full his usefulness to the public. Yet, should he ever be so fortunately situated as not to need payment for his services, and should not intend to demand compensation, the possession and exercise of this psychological faculty of "making connection" still would be required to enable him to give away his services.

However, I am talking of the economic aspect of the problem—and talking quite frankly and unreservedly. Furthermore, I

am trying to make it clear to the doctor that this business element of practice, far from being a matter to be ashamed of or touchy about, is the vital thing that effects the contact between your work and its object. No physician need feel ashamed to desire success, yes, financial success. No doctor need blush for having attained success. Not only is the laborer worthy of his hire—that is but one side of it—but the highly-paid laborer is worth more to the world than the low-paid. Let us, brothers, without derogating one whit the dignity and loftiness of our work, put away false delicacy, and frankly talk out together, ways and means of making doctors—yes, of making *ourselves*—more prosperous, and therefore more useful, men.

It is in *this* time we are to live, and no other. Let us humbly, tremblingly, manfully look at it, and we shall not wish that the sun could go back its ten degrees, or that we could go back with it. If easy times are departed, it is that difficult times may make us more earnest; that they may teach us not to depend on ourselves.—F. D. Maurice.

CALCIUM SALTS IN PNEUMONIA

When one knows he is right, he does not need the weight of authority to back his convictions. Nevertheless, there is a certain satisfaction in having one's judgment, no matter how clearly established it may be, endorsed by such authority; and especially so when the endorsement not only applies to the bare conclusion, but to all the detailed reasoning and experience through which the conclusion was reached. Such is our feeling upon finding that no less an authority than Sir James Barr, in his presidential address delivered before the Southern Glasgow Medical Society, made a categorical affirmation of all that we have for so long asserted concerning the value of calcium in combination with iodine in the treatment of pneumonia and other respiratory disorders.

Doctor Barr very pertinently points out that the crucial dangers in all inflammatory diseases of the lungs and the respiratory organs —in all fevers, for that matter, but especially in those in which the right heart is directly embarrassed—are, first, the destruction of leukocytes and, next, the tendency of the blood to antemortem clotting. And then he further points out that the protection against these contingencies is in direct proportion to the available supply of calcium in the system. These principles find clinical expression in the axiom that the more calcium salts and leukocytes the sputum contains, the more favorable is the prognosis.

Nor does the beneficent role of the calcium salts stop here. As every physician knows, from the time that he knows anything at all about the physiology of the circulation, calcium salts are the principal agent in maintaining cardiac contraction and muscular tone—an important enough state of affairs under any circumstance, but of paramount necessity in pneumonia, where the capacity of the heart is the crux of the situation. Unquestionably, one of the factors in the impairment of cardiac capacity which so frequently attends this and other febrile diseases, and which brings about such a disastrous denouement, is the rapid loss of calcium from the blood that always takes place in these diseases.

The keynote to the successful treatment of pneumonia is, that we should not wait for emergencies to overtake us and to depend upon combating them when they occur, but that we should, from the outset, anticipate and forestall them. Particularly is this true regarding the heart. Here, there is no place whatever for expectant therapy. We *know*, beyond all question, that sooner or later in this disease the heart will be subjected to a tremendous strain, one that well might overwhelm the most adequate organ. And it is our routine duty to prepare the heart for this crisis, not by whipping it into making drafts upon its reserve, but by furnishing the muscle with a reserve upon which to draw when the time does come.

Digitalis is one of our most efficient standbys in this anticipatory treatment—which, be it observed, is far different from expectant treatment. In digitalis, we have an agent which both tones and rests the cardiac muscle, conserving its strength for the critical moment.

However, according to the rational therapeutic principle that has just received endorsement from Sir James Barr, the administration of calcium salts during this anticipatory period is of equal importance with that of digitalis. For, to feed the patient calcium, is to furnish him with the very physiologic reserve from which his heart-muscle draws its contractile power.

Says Sir James: "I have had good results from calcium salts with iodine." But that dictum, to the readers of CLINICAL MEDICINE, spells calx iodata.

Here, then, is a field of usefulness for calx iodata not generally appreciated or exploited, yet, theoretically rational and clin-

ically verified. The season of pneumonia is upon us now. Not but that, like death, this enemy has all seasons for its own; but in the late months of winter, or the early months of spring, whichever we may choose to call them, pneumonia is more prevalent than any other time of the year. Therefore, it is timely to bear in mind the advantage of giving your pneumonia patient such a remedy from the very beginning of the attack.

WHY THE ALKALOIDS?

To the very numerous class to whom the active principles are simply one indifferent form out of a number of the corresponding drug, I have a suggestion; it is taken from the report upon emetine, made public by Professor Rogers, of Calcutta—a very good authority, and one not to be charged with any commercial interest in the drug.

Altogether, 30 cases of amebic dysentery were treated with ipecac, and 25 with emetine, the latter administered hypodermatically. These are the data:

IPECAC CASES

4 died within 3 days
7 died after 3 days
2 discharged in very bad condition
4 discharged uncured
13 discharged cured

EMETINE CASES

2 died within 3 days
2 died of other diseases
21 were cured

Those dying within three days were virtually beyond help when admitted to the hospital.

The average stay of the ipecac-patients in hospital was 16.4 days; of the emetine-patients 7.2 days.

The average number of days before the stools finally became normal was, under ipecac, 11.4 days; under emetine, 2.35 days.

The average doses of ipecac were 406 grains; of emetine, 2 grains—equivalent to 180 grains of ipecac.

Drop the mysticism, the superstition that sees in a drug something beyond its active principles, the rather silly quibbling as to whether the latter represent the remedial values of the plant or are educts or products, and the similar nonessential objections with which conservatism endeavors to stem the advance of knowledge; and come down to hard fact. There you have it. We can do with emetine what we can not do with ipecacuanha; and we can do with quinine, morphine, cocaine, atropine, strychnine, pilocarpine, and eserine, what we can not do with cinchona, opium, belladonna, nux vomica, jaborandi, and calabar bean.

What is true of these eight well-known, well-established pharmacopeial alkaloids, is true of the entire range of alkaloids and other active principles throughout the plant-world.

Quit dreaming! Wake up! Give your imagination a rest and your power of observation and your reason a chance.

I am glad to think
I am not bound to make the world go right,
But only to discover and to do,
With cheerful heart, the work that God appoints.
I will trust in Him
That He can hold His own; and I will take
His will, above the work He sendeth me,
To be my chiefest good.

—Jean Ingelow.

LINT FOR WOUND COVERING IN WAR TIME

Many among us well remember the days when absorbent cotton was a thing still hidden in the womb of futurity, and many a pound of lint—charpie we called it, by its French name—the writer of these lines has "pulled" for his father, who was one of those old-fashioned country doctors just as Doctor Lydston so faithfully depicts that race of extinguished benefactors in his (seemingly forgotten) "Over the Hookah;" and it seemed mother and the farmers' wives never could turn up enough of wornout linen and cotton garments or even bed-sheets to meet the demands.

Those are bygone days, living only in the memories of a dying generation, and defatted cotton-fiber became king. Pulled lint lapsed into nirvanic desuetude, and even "us of the olden times" could think of it only with a pitying smile, wondering "how ever" this old world could have got along with such a crude stuff. Yes, and we children sat around the table, maybe on the floor in a corner, and plucked and plucked with hands first washed, in a child's fashion—perhaps, perhaps not; and the bunched threads were deposited on the table or in our laps, and finally, all thrown together into some pasteboard box or such.

Those were the good old times when the Secesh seceshed; when Lister had not yet thought out listerine or accused invisible bugs of all the mischief in this sad old world; when laudable pus still was a thing for the doctor to be proud of; when, in fact, he was not a British Lord, but himself was picking

lint for some poor chap that "the enemy" had endeavored to convert into a perambulating sieve.

Now, however, comes a war—War, capital W—and there is not enough double-cleansed defatted cotton around to comfort all those misguided men who think it glorious to set themselves up as targets for dumdums and cannon-balls. Of necessity, the use of lint has been revived: the demand by field-surgeons in France, Germany, Britain, Austria, Russia for material with which to dress the soldiers' wounds is enormous. Of course, greater care is generally being exercised than in preantiseptic days, in clean handling and sterilizing of the lint; yet, under pressure, and especially among an ignorant, backward population, these requirements often are not met. So, with accustomed thoroughness, a German military surgeon has made an investigation.

In the *Militaerarzt* (1914, No. 17), Doctor Hochenegg reports, briefly, these findings: The lint was drawn from pieces of (boiled and ironed) old linen and percale, no precautions whatever being taken by the workers. The product was disclosed to be relatively germ-free, and throughout harbored none but benign saprophytes; but subsequent routine sterilizing destroyed these, as well as any pathogenic microorganisms, occasionally adhering.

In practice, this lint proved to be very elastic, pliable, and markedly absorptive as to the various wound secretions, thus constituting an excellent substitute for absorbent cotton as a covering for wounds. Adhesion of the fibers is obviated by placing the lint between gauze. It must be understood, of course, that each batch of lint should be drawn from the same kind, or very similar textile, not mixing different yarns.

It is a sad weakness in us, after all, that the thought of a man's death hallows him anew to us—as if life were not sacred, too, as if it were a comparatively light thing to fail in love and reverence to the brother who has to climb the whole toilsome steep with us, and all our tears and tenderness were due to the one who is spared half the hard journey.—George Eliot.

TO END WARS

Dr. Charles F. Taylor, editor of *The Medical World*, has issued a proposal designed to put an end to wars between civilized countries. He suggests that the President send invitations to a conference, to be held in Geneva after the close of the present war, of delegates from all countries possessing settled governments. Before this conference is to be placed a plan for an International Government, under whose control are to be put all matters pertaining to war—the armies and munitions of war, among others. The latter are to be employed thereafter solely for maintaining domestic peace and to repulse any foreign aggression that may be attempted by parties outside the international comity.

It is unnecessary to dilate upon the benefits that might follow the adoption of such a scheme. The world not only would be relieved of war and its frightful results, but of the crushing financial burdens of armaments. The men and money thus released could be directed into the channels of commerce and internal development. Truly, the millennium would dawn.

And there is just the difficulty—the plan is based on the willingness of men to be fair and just, which they are not; on the assumption that the human race is civilized, which it isn't.

That such a condition may arise some time and be made practicable, is our hope—and that hope constitutes our optimistic expression of belief in the possibility of human improvement and the existence of a beneficient Providence. Meanwhile, we are rather proud that it is a doctor, and a medical editor, who is first to propose such a plan and put it in intelligible words. More power to you, Taylor; may your shadow never grow less.

The plain truth is, that Europe is so far behind us in moral development that she can not yet comprehend the loftiness of our motives in dealing with Cuba and Mexico as we have. Perhaps there may be a bit of hysteria in our action; but, after all, we have given the world an example of rare generosity and forbearance, an example badly needed. We have seen some of the richest sections of this earth fairly begging us to take them and make of them what nature has made possible, to utilize the riches with which she has so prodigally endowed them to restore peace and protect honest industry there; and we have resolutely held aloof and told them they must learn to help themselves.

Part of our moral elevation we take as evidence of superior probity. Part may be posing; but not much. But part we may as well acknowledge is due to our own sense of unexampled richness—we have so much land already that the possession of more does not hold out to us the lure it does to close-packed Europe. But—how long is this to continue? Already we, who feel so

powerfully the hunger for land, begin to find it grow scarce. We have no more homestead territory, except that which requires development by engineering-works and other capitalistic enterprises. We have to drain swamps, irrigate arid tracts, adapt vegetable crops to varying and hitherto useless regions. With the exhaustion of wild lands, we must rebuild the fertility and increase the productiveness of that already subdued by the plow. We must go back and pick up the unconsidered millions of fairly good acres skipt in our race to grasp the more fertile tracts.

Decades may be thus spent before we reach the crowded state of Belgium, Germany or France. But how about the immigrant? With the close of the present war we shall see an irruption of multitudes fleeing to our shores, the like of which the world has never witnessed. The swarms that descended upon the Roman empire will be dwarfed by the coming outpour. Confidence in the maintenance of peace and the opportunity to work undisturbed will be gone from Europe; and every bereaved family will turn longing eyes to the land of promise, the one place on earth where war is not domesticated, where there is quiet at home and force to fend off foreign aggression.

Why should any Belgian remain in that country, when our own broad acres are open to him? Why should the citizen of any other small neutral nation stay there to suffer the fate meted out to Belgium? Why should any man in the warlike countries who is interested in any work or pursuit remain to be dragged from his life-work, to shoot down other men with whom he has no quarrel? The mother whose little sons are growing up to follow their father and brothers to unnamed graves; the workers whose industries are stopt and the fruits of a lifetime of labor swept away, their homes in ruins, their dear ones stricken by the fiery blast of war—the scholar who is snatched from books and laboratory and placed under some illiterate savage to learn the art of murder—why should any of these remain in that blood-saturated land?

Get ready for the coming human deluge. Open the vacant lands; study the races of the old world and be ready to direct each to his best habitat. Send the cotton-growing Armenian to the South, the fruit-loving Italian to the Gulf Coast, the wheat-growing Russ to the northwest, the French vintner to the Pacific shores, the Dane to the dairies of Wisconsin. Send all of them to the huge, undeveloped fat fields of the lower Mississippi Valley, where there is the richest land in the world, crying for cultivators. There is a science still capable of development, still unnamed, that of fitting the immigrating multitudes to their most congenial locations.

Make yourselves nests of pleasant thoughts. None of us know what fairy palaces we might build of beautiful thought—proof against all adversity. Bright fancies, satisfied memories, noble histories, faithful sayings, treasure-houses of precious and restful thoughts, which care cannot disturb, nor pain make gloomy, nor poverty take away from us—houses not built with hands, for our souls to live in.—John Ruskin.

COERCION A POOR POLICY

That was an excellent address which Dr. J. H. Beal delivered before the St. Louis College of Pharmacy, not long ago, in which he dealt with the subject of coercion, both in religion and in medicine, pointing out the danger of that medieval idea that superior knowledge in any direction gives the right to impose one's peculiar theories upon everybody else and to say to those who may be less imformed than he: "You shall not have that which you want, but only what is good for you; and we are the people who know what is good for you." It was a timely warning, well and wisely uttered, and the address deserves the widest dissemination.

As a general proposition, coercion is poor policy, in all matters of interest that admit of being viewed from more than one standpoint. It is inherently, basically unsound, because no amount of force or coercion ever settled a question, one way or the other. No question ever is settled until it is settled right; and the right is not arrived at while one party to the question is galling under the other's yoke. Practically, it is an exceedingly foolish policy, because, just as no question can be settled doctrinally in that manner, so also no situation arising out of the question ever is really controlled by it.

The exercise of coercion is in itself an admission that there is a desire on the part of the coerced, while held in leash for the moment, yet, wholly unconquered, to do the very thing that is the subject of coercion, and that the instant the leash is slipped, the desire will leap into still more violent activity.

Furthermore, no man or body of men ever exercised coercion without themselves suffering from the recoil. The brain may coerce the various members of the body to undue or unnatural activity; but the brain

suffers from the general overstrain. The interests of mankind, and especially of those who are concerned in the same general lines of activity, are so interwoven, so interdependent that none can expect to further his own cause by imposing injustice upon that of another, or by coercing another into a course which the one coerced resents or disapproves.

We have more than once preached these truths in these pages, in their application to the contentions which divide the various ranks of organized and unorganized medicine, and those which divide medicine and its allied interests, and we believe they cannot be reiterated with too much insistency. Every one of these interests has its own peculiar side of the various questions at issue, and each one demands fair dealing and consideration from the others.

As the peculiar champion of the interests of the physician, we have at times advocated the adoption of certain decisive policies and demonstrations, where we thought his interests were not receiving just consideration at the hands of medical organization. But such demonstrations are both useless and undesirable unless they be displays of reason and justice. And in the promotion of fairness and equity we always have been, and shall continue to be, just as prompt to champion the rights of organized medicine as those of the independent men in the profession.

The only effective way to persuade a man is to make him change his mind. Occasionally it is necessary, in order to do this, to make a more or less imposing and impressive display of force. But, unless it be the force of right and reasonableness, it would better have been left undisplayed. Demonstrations which merely have the effect of endowing a questionable position with the power of might only serve to make the position so much the more questionable. Only those demonstrations which invest right and justice with the might of solidarity and cooperation, thus adding to their genuine persuasiveness, have any effect in bringing about a real settlement of any large problem.

We repeat what we have said many times before, namely, that the fundamental interests of every branch and aspect of the profession are identical. There are questions of policy and conduct upon which there are bound to be differences of opinion. Nothing is to be gained in the solution of such questions and the harmonizing of such differences by selfish courses of action on either side, which disregard other men's rights, nor by any attempt at forcible coercion on the part of either.

All of the difficulties between the contending interests are susceptible of solution by calm, friendly discussion and by a reasonable policy of give and take. And this is the *only* way to a satisfactory, permanent solution.

May I reach
That purest heaven, be to other souls
The cup of strength in some great agony,
Enkindle generous ardor, feed pure love,
Be the sweet presence of a good diffused,
And in diffusion ever more intense!
So shall I join the choir invisible
Whose music is the gladness of the world.
—George Eliot.

STUDY AMERICAN DRUGS

Quite a number of medical journals have taken up the cry for attention to be given to our native drug-plants. *The Therapeutic Digest* has a strong editorial plea for our plants in its November number. The following recommendations of American drug-plants are made:

Cimicifuga, for nerve and for muscle pain.

Aconite, for early fever, especially mucous.

Veratrum viride, for sthenic fevers. (Just how we are to secure the green hellebore, when the Pharmacopeia permits the druggist to substitute the cheap European white hellebore, is not stated.)

American hemp, for the cannabis indica, as a urinary sedative and an antispasmodic.

Piscidia erythrina, for sedating coughs, spasm, neuralgia, and febrile pains.

Lupulin, for insomnia, priapism, chordee, and to increase appetite.

Valerian, as a nervine, acting on the spinal centers; for nervous depression, chorea, spasm, hysteria.

Ustilago, instead of ergot, in uterine inertia.

Pituitrin, for uterine inertia.

Xanthoxylum, for nervous atony; as a capillary stimulant and in catarrhal gastritis.

Stramonium, instead of belladonna, for acute maniacal delirium.

Apocynum, instead of digitalis.

Lycopus, instead of digitalis.

Cratægus, for heart weaknesses.

Lobelia, as an antispasmodic.

Sanguinaria, as a respiratory tonic.

Asclepias, as a remedy in respiratory maladies.

Echinacea, for diabetic gangrene and for centipede wounds.

Solanum, for pertussis.

Conium, for mental nervousness and so on, following overwork.

Rhus toxicodendron, for migraines.

Cypripedium, for chorea.

Hyoscyamus, for paralysis agitans.

Staphisagria, for spermatorrhea.

Hydrangea, for vesical tenesmus.

Gelsemium, for pruritus vulvæ.

One may ask, what is there in these suggestions? Very little beyond an indication for experimental trials. When one speaks of using a remedy "for its action on the nervous centers," we ask, On what centers? And what action—stimulant or sedative?

Crudity characterizes the earliest stages of the science, but the time has come when we can demand something more definite. This lore of the earlier day has its value, but needs to be corrected and judged by the brighter light of the present. It would be equally wrong to throw it away in disdain, and to depend on it blindly, as the sectarian does on his outworn creed.

It has been the fashion for regular writers who condescend to notice native American drugs to find the recommendations of Eclectics "wholly unworthy of serious consideration," and exhibiting naught but "phenomenal incapacity and monumental ignorance." That sounds good and commends the critic as very, very regular and altogether lofty.

The trouble is, that it is dishonest, untrue, and wholly childish. These men possess eyes and ears, and somewhat of gray matter in their heads; they are able to see and hear, and to reason on their observations. They have made study in the sick-room their specialty, and their success with patients has not led to their exclusion from practice among the better classes.

I am putting forth no plea for the Eclectics—they are able to fight their own battles. I am putting up a plea for ourselves and our patients. If these men have any good remedies, we want them; if their observations have any merit, we claim the right to utilize them.

We want our fellows to try whatever suggestions the Eclectics make, that seem plausible. Are we not capable of judging? Can we not trust ourselves to win now the grain out of the chaff? Take exactly the position toward them that Jenner did when he found the English milkmaids had discovered the protective power of vaccination; and laid the foundation for modern serotherapy.

What is there a reasonable man can deny or assert positively now? We have just finished reading Burton's "Arabian Nights," and in the whole wonderful mass of oriental imaginings found nothing nearly so crazy as what we now accept as true concerning radiotherapy, wireless telegraphy, color photography, and so on.

Do not accept a solitary assertion of the Eclectics as true; but try some of them out. Take the control they claim for polymnia uvedalia over enlargements of the spleen—that is easy for our brethren in the malarial belt—try it.

PNEUMONIA—SYSTEMIC OR LOCAL?

Until very recent times the respiratory origin of simple acute lobar pneumonia never seems to have been seriously called in question. It was universally agreed that the pneumococcus, which is a constant inhabitant of the mouth, became virulent under certain conditions, made its way into the respiratory passages and there set up a specific inflammatory process. This was the first effect of the bacteriological interpretations of the disease—to establish the conception of pneumonia as a local infection, as opposed to the older theory of pneumonia as being a general disease, with a secondary pulmonary localization.

Of late, however, we have witnessed the tendency of the modern doctrine of infection to return to the ancient conception of "lung-fever," changed in detail, to be sure, to correspond with our present-day knowledge of etiology, but identical as to the main process. In short, we are being taught that pneumonia is the outcome of a pneumococcus septicemia, of which, as Weill declares, "the pulmonary localization is but a secondary incident, often tardy, often obscure."

To quote another prominent authority, Joltrain: "Sometimes the symptoms of the septicemia predominate, sometimes they are so slight as to escape our superficial observation, in which case it is a matter of latent septicemia."

Dr. Roger Voisin, chief of the medical pediatric clinic of Paris, in a lengthy and powerful article appearing in the *Paris Médicale*, combats this septicemia-theory of pneumonia, taking his position principally upon the pneumonia of children, where the septicemia-doctrine is supposed to have its strongest exemplification. One by one he takes up the arguments of the advocates of the theory, from the clinical, pathological, bacteriological, and radiological standpoints, respectively, and critically analyzes them.

Thus Voisin points out that the alleged absence of physical signs in many cases of pneumonia cannot be regarded as evidence of the absence of pulmonary lesion; that frequently the seeming lack of such signs is due to a superficial and incomplete examination; that the functional symptoms, especially the sharply defined pain, certainly indicate changes in the lung; and, lastly, that Weill himself admits that from the very beginning of pneumonia in children there invariably is an inequality of expansion in the two sides of the chest.

As to the arguments derived from the pathologic anatomy, Voisin sees nothing in the anatomic localization of the lesion inconsistent with the respiratory origin of the disease. The fact that the disease focalizes in one or the other lobe of the lung, while the intervening portions of the respiratory tract escape, is simply owing to a weakened resistence in the part attacked and a healthy resistant condition of the parts that escape. He further points out that the localization of all the inflammatory lesions is determined largely by the nerve supply as also the fact, adduced by the septicemia-advocates, that the pneumonic consolidation following the vascular supply results from the nerve distribution being the same as the vascular.

From the bacteriological standpoint, which furnishes the advocates of the septicemia theory with their strongest argument, Voisin considers that doctrine particularly weak. He calls attention to the fact that there is a vast difference between the *presence* of germs in the blood and their *multiplication* there, and he points out that the latter condition has never been demonstrated in simple lobar pneumonia. In fact, he declares that bacillemia is far from being the rule in pneumonia and asserts that there is less reason to suppose that the microbes pass from the blood into the lung than that they pass from the lung into the blood; he affirms that the preponderance of evidence points to their presence in the blood being an accidental affair.

The arguments from the radiographic side are too lengthy to be gone into here. Suffice it to say that, by the showing of the radiographers themselves, Doctor Voisin shows that the lung opacity in pneumonia often precedes the appearance of the slightest symptoms of general septicemia, which effectually disposes of the radiographic argument.

All of which is sufficiently interesting in itself, sheerly as a discussion of the true nature and the processes of pneumonia; and important, too, in that it has a very definite bearing upon the prophylaxis and the treatment of the disease. These views restore the validity of those precautions against pneumonia which common sense has, for years, proclaimed, but which our rather extreme bacteriology has almost caused us to repudiate; and it both justifies and demands a therapeutic course far other than the nugatory nihilism and masterly inactivity to which so many of the profession have been in imminent danger of yielding.

However, this matter has, I think, a much further-reaching significance even than that. It speaks expressively of the limitations of bacteriology in the interpretation of disease, in general. With a full appreciation of the incalculable contributions which bacteriology has made to the understanding of disease, as also the invaluable help it has rendered in the prevention and treatment of disease, we now learn that, after all, the intelligent interpretation of disease-processes depends upon an intelligent clinical observation of the patient.

Assuredly, the laboratory and the microscope are invaluable agencies for the detection of hidden causes and the determination of biologic processes, but they do not, after all is said, change clinical facts. In so far as they *explain* clinical facts, the microscope and the test tube command our full confidence; but, when they undertake to *controvert* clinical facts and invite us to make clinical facts tally with them, then the laboratory aids are liable to be misleading. We should, at least, be slow to abandon well-established clinical findings at the sheer behest of the laboratory; we have a right to demand that it either disprove those findings, or else explain them as they stand.

From a therapeutic standpoint, Voisin's conclusions lend added weight to the methods which we have advocated for many years in this journal. It brings us back again to the necessity of relieving the pulmonary congestion and of seeking to induce normal vascular equilibrium, so much disturbed by the localized inflammatory process in the lung. This method was rational when it was first proposed by Burggraeve; and it is rational today. Of greatest importance—*it cures.*

Leading Articles

Blood-Changes in Dementia Præcox

And Artificial Leukocytosis in Its Treatment

By Halvar Lundvall, M. D., Lund, Sweden

EDITORIAL NOTE.—We owe this paper to the kindness of Dr. Bayard Holmes, of Chicago, to whom it was sent with a view to its publication in America. This paper should be read in association with the one by Doctor Holmes, which follows.

MANY tracks have been beaten by those endeavoring to make out the nature of dementia præcox. I am not entering upon everything written on the importance of heredity. The vast amount of industry and intellectual power spent upon this matter can scarcely be said to have contributed to a better understanding of the disease in question. Nor can it be said that Freud's theories about this disease have been of any considerable service to us.

The histologic examination of the brain has given no results worth noticing; at least, the changes mentioned are not constant and may well be secondary.

The experiments with cultivation of bacteria from the blood and other fluids of the body of patients suffering from dementia præcox, and the experiments of agglutination of the same made by Bruce, may also prove to be a failure when critically examined.

Clinical science, which has enabled us to distinguish different forms within the large group of diseases styled dementia præcox, has also called our attention to the obvious relation that this disease has to the genital glands. The trials with the Abderhalden reaction which Fauser, Wegener, and others have already made also point to the supposition that a dysfunction of the genital glands is a fairly constant symptom in dementia præcox.

However, if one has spoken of a relationship subsisting between dementia præcox and the genital glands, as proven both by clinical investigation and the Abderhalden reaction, it would, for all that, be a hasty inference to think that this dysfunction of the genital glands is the cause of the disordered mentality. Still less is one likely to feel tempted, by virtue of these experiments, to enter upon some kind of specific therapy against dementia præcox.

Another way, still, has been tried, in order to get at the nature of this disease. I am thinking of the morphologic examination of the blood. Investigations of this kind have been published ever since the middle of the preceding century. Considerations of space prevent my giving a somewhat close account of all these investigations. I shall content myself with pointing out that what strikes one most strongly, perhaps, when examining their results is the discrepancies encountered, not alone between different authors, but even between different cases of the same author. Even if these poor results may in part be accounted for by the somewhat unreliable methods of blood examinations resorted to by many investigators as also by the long-prevailing uncertainty of the psychiatrical diagnoses, I am of opinion that the chief reason lies in another direction.

Variability of Blood Composition—Striking New Observations

The fact is, that all these authors, almost without exception, obtained their results by making but one single test of the blood of their patients, and then thought they thus had obtained an adequate picture of its composition. But this is a fallacy. As a matter of fact, in the few instances in which the blood of the same patient has been examined on more than one occasion, and during different mental states, distinct changes in the blood-picture have been evidenced. A few examples may illustrate this fact.

In five cases of manic depressive insanity, Fisher has shown that there is an increase in the cellular element of the blood during the maniacal stage. The increase in the white blood-corpuscles is represented chiefly by a polynucleosis. I myself have examined, during a considerable period, the composition of the blood in two cases of the same disease, and I made the same observation. Klippel has pointed out the same relationship in a case of transitory delirium (*delire transitoire*), in which he had examined the blood twice—in the excited and in the quiescent period.

In "acute mania," Bruce has found, at the beginning of the seizure, a decrease in the number of the leukocytes. Later there appears a leukocytosis, chiefly as a polynucleosis. If the latter is pronounced, it is a good prognostic. As to katatony, Bruce tries to prove that the disease begins acutely with fever and a polynucleosis, which later passes into a mononucleosis. If health ensues, a temporary eosinophilia will be found. These interesting investigations were not carried out, however, with the minuteness necessary for scientific blood examinations. Later English authors, however, confirm this increase in the leukocytes. Whether and to what extent this is due exclusively to disturbances in the concentration of the blood (these are not at all rare with the insane), it is impossible to decide. And Bruce and his successors have rendered the possibility of control in this respect impossible by not stating at the same time the number of the red corpuscles present.

Rougean finds in lunatics oligocythemia and an increase in the polynuclear leukocytes, and from this he infers that the psychoses rest upon a toxi-infectious basis. (Such a conclusion as regards the mental diseases seems altogether too bold, though!)

Dide finds anemia, which should be a sign of intoxication or infection. A rise of the red blood-corpuscles depends on a molecular condensation of the blood. It is found, therefore, together with a rise of the leukocytes, during states of excitement, when the excretions are increased.

Mononucleosis is a sign of the deficient reaction of the organism against a toxi-infection of long standing.

Eosinophilia is a "critical" sign.

In 1907, I found that in dementia præcox there occurred, under ordinary circumstances, no decrease in the red nor an increase in the white blood-corpuscles, but I demonstrated periodical "blood-crises" appearing in the form of anemia and an increase in the white corpuscles. These states might appear days or weeks before the agitated periods, but otherwise they coincided with them. I took the cause to be a toxemia.

Kuhn, Purdum and Wells, and Heilemann find a decrease of the polynuclear and an increase of the mononuclear and eosinophile leukocytes.

Some of the Results Tabulated

Leaving aside my results of the year 1907, it is held that the blood of patients suffering from dementia præcox exhibits: a decrease in the number of red corpuscles, an increase in the number of white corpuscles, with a decreased percentage of the neutrophile elements, and an increased percentage of the lymphocytar, mononuclear, and eosinophile elements. I am going to show that this view is onesided and misleading.

TABLE I

		Red Corpuscles	White Corpuscles	Neutrophile Leukocytes Percent	Eosinophile Leukocytes Percent
Males	Quiet	6,820,000 to 4,480,000	10,550 to 5,200	67.8 to 42.1	2.6 to 0.1
	Agitated	5,220,000 to 3,450,000	17,300 to 7,800	79.1 to 58.6	10.3 to 1.6
Females	Quiet	6,100,000 to 4,000,000	10,500 to5,600	61.2 to 40.9	4.1 to 0.1
	Agitated	4,960,000 to 2,600,000	19,300 toS,900	77.7 to 58.4	11.2 to 0.9

Apart from the serial examinations which I shall present further on, I have also made single blood examinations in the case of a number of patients and in this way, in 150 cases of dementia præcox, I found the following values:

I arrived at these figures by taking 2 specimens from a patient at the same time, then took the mean proportional of the numbers for the two specimens. It goes without saying that I avoided the leukocytosis of digestion.

In Table II, I have put together the results of blood calculations on 14 other patients. The different specimens were taken at intervals of a week. The results were the same. These figures show, however, that the composition of the blood of the same patient is different during different phases of the disease.

In order to gain a still clearer view of the changes developing during different mental states, I have examined the blood of 15 other patients daily, or every other day, over a long period of time, up to more than three months. I arrived at the following results:

The Phenomenon of Blood-Crises

During the periods when the patients are free from phenomena of psychical irritation, one finds, as a rule, no changes other than leukopenia with a relative mononucleotions during the course of the day, it also exhibits profound recessions, often going down to normal values. Frequently one can distinguish an initial and a terminal leukocytosis. The latter occasionally remains for some time after the number of red corpuscles has again gone back to the values they showed before the crisis.

The leukocytosis is chiefly a polynucleosis. This increase often is preceded by a considerable but rapidly passing decrease in the polynuclear cells.

TABLE II

Case		Quiet	Quiet	Agitated	Agitated	Agitated	Quiet	Quiet
1.	Red corpuscles	.....	5,530,000	4,855,000	.....	.....	.....	.....
	White corpuscles	.....	10,600	15,000	.....	.....	.....	.....
2.	Red corpuscles	.....	5,605,000	4,755,000	.....	.....	.....	.....
	White corpuscles	.....	10,300	12,950	.....	.....	.....	.....
3.	Red corpuscles	.....	5,280,000	4,875,000	4,565,000	.....	.....	.....
	White corpuscles	.....	6,300	8,200	13,500	.....	.....	.....
4.	Red corpuscles	.....	6,200,000	5,300,000	.....	.....	.....	.....
	White corpuscles	.....	8,000	12,000	.....	.....	.....	.....
5.	Red corpuscles	.....	5,860,000	5,140,000	.....	.....	.....	.....
	White corpuscles	.....	9,000	16,500	.....	.....	.....	.....
6.	Red corpuscles	.....	.....	.....	.....	3,125,000	4,270,000	.....
	White corpuscles	.....	.....	.....	.....	17,300	8,100	.....
7.	Red corpuscles	.....	.....	.....	.....	4,755,000	5,095,000	.....
	White corpuscles	.....	.....	.....	.....	12,200	7,800	.....
8.	Red corpuscles	.....	.....	.....	4,710,000	4,725,000	4,960,000	.....
	White corpuscles	.....	.....	.....	12,500	11,600	7,500	.....
9.	Red corpuscles	.....	.....	.....	.....	3,650,000	3,980,000	4,750,000
	White corpuscles	.....	.....	.....	.....	11,000	17,000	8,000
10.	Red corpuscles	.....	.....	.....	.....	4,270,000	5,050,000	.....
	White corpuscles	.....	.....	.....	.....	8,800	10,100	.....
11.	Red corpuscles	.....	.....	.....	4,060,000	5,340,000	5,540,000	.....
	White corpuscles	.....	.....	.....	15,100	16,300	12,300	.....
12.	Red corpuscles	5,250,000	4,900,000	4,650,000	.....	.....	.....	.....
	White corpuscles	6,700	11,200	10,500	.....	.....	.....	.....
13.	Red corpuscles	.....	.....	3,960,000	3,940,000	4,250,000	4,500,000	.....
	White corpuscles	.....	.....	13,200	10,300	16,500	8,000	.....
14.	Red corpuscles	.....	4,230,000	4,150,000	4,350,000	.....	5,150,000	.....
	White corpuscles	.....	13,000	11,000	16,000	.....	7,000	.....

sis, decrease of the neutrophile and the eosinophile leukocytes, and a seeming polycythemia. The polycythemia certainly depends upon vasomotoric disturbances, and changes of concentration connected therewith, in the peripheral vessels.

In the case of patients presenting periodical states of excitement, on the other hand, one finds quite typical changes recurring at intervals and to these I have given the name "blood-crises." These occur in every degree, from hardly perceptible changes to the most radical alterations, and consist in a decrease of the number of red corpuscles and in an increase of the white ones.

The leukocytosis does not occur as a smooth wave. Besides the physiological oscilla-

The eosinophile leukocytes show, at the beginning of the crisis, a further reduction from their already low values, and then they rise, sometimes considerably. The eosinophilia often remains for a long time after the blood-crisis.

The "mast-cells" usually appear in a somewhat increased number at the time of the critical, but especially of the post-critical, eosinophilia.

During the blood-crises, the vasomotoric disturbances and the changes in the blood concentration connected therewith may also be of some significance. They cannot be supposed, however, to be the chief cause of the blood-crisis; the motley changing of the blood-picture hardly is consistent with such

a supposition*. Here we must assume a new growth, namely, a pumping into the blood system of leukocytes from the bone-marrow; this view being favored by the almost constant appearance of neutrophile myelocytes, especially near the close of the blood-crisis. A real hemolysis also is to be assumed—an interesting parallel to the periodical increases in the "N-ausscheidung," (nitrogen elimination) occurring in lunatics.

These blood-crises I have found in the case of patients who had been suffering for more than twenty years, and I have observed them also in fairly recent cases. It seems justifiable, therefore, to consider them a constant phenomenon.

These blood-crises often pass without perceptible symptoms. Only if they are sufficiently intense or have lasted for a sufficiently long time, they are attended by phenomena of physical irritation. Consequently these crises which may partly appear without perceptible mental disturbances, partly precede (often by days and weeks) the physical disturbances, the state of excitement, cannot be considered as the result of increased muscle work or of physical excitement.

An Explanation Suggested

The most natural explanation seems to me to be the assumption of a toxemia, of whatever kind that may be†. And as we do not now hesitate, in the case of many infectious diseases, to see in a strong leukocytosis a sign of the protecting processes going on in the body, whereas we assign to leukopenia a bad prognostic significance, because we see in it a sign of the diminished fighting-power of the body, it does not seem to be presumptious to apply the same point of view to the case in question.

Thus, then, the leukocytosis we meet with in the blood-crises is a sign of the activity of the organism, the struggle of the organism against the cause of the disease.

Sodium Nucleate: A Promising Remedy

He who is really convinced that dementia præcox depends upon material causes must also feel it his duty to find a remedy. He cannot possibly feel satisfied with the expectative treatment we now give our patients. Moreover, the idea of trying to find a somatic treatment for dementia præcox, as well as for other diseases, is by no means an unfamiliar one. On the other hand, many signs go to show that the disease is accessible to psychical therapy.

We have long known that certain intercurrent diseases often influence dementia præcox in a striking way. Abdominal typhus no doubt is most known in this respect. In another publication I have pointed out that the important thing in this case is the hyperleukocytosis which regularly develops after typhus. The idea suggests itself then, to call forth by deliberate infections or by other, less dangerous means, an increase of the leukocytes; and in paralysis such an artificial hyperleukocytosis has been resorted to. Occasionally some case of dementia præcox may also have come under treatment. Thus, in 1910, Pilz administered tuberculin, with good results, in katatonia.

I have paid attention to dementia præcox exclusively. After trying a great many other substances, I eventually fixed my choice on sodium nucleate, or, as we say here, natrium nucleinicum.

However, I thought I observed that the patients became accustomed to the remedy too quickly when the treatment was long continued, responding less even to increased doses. For this reason, I have, for some time, combined the nuclein with other remedies likely to increase the leukocytes, namely, hetol and arsenous acid. Now I use exclusively the following combination.

Formula for Lundvall's Nuclein Mixture

℞ Quassinisicci depurati (Merck) Gm. 40.0
Sodii nucleatis.....Gm. 200.0
Acidi arsenosi.....Gm. 0.1
Aquæ destillatæ, q. s. ad.....Cc. 1000

The ordinary doctor can very well prepare this solution himself; but inasmuch as it is somewhat difficult to obtain a clear and tenable preparation, it will be better to have it prepared by an apothecary. (The chemist's-shop "Hjorten" at Lund keeps it on hand, sealed in sterilized ampules holding 5 and 10 Cc., respectively.)

Mode of Administering the Nuclein Mixture

Of this solution a dose of from 2 to 15 Cc. is injected hypodermically twice a day. It may be mentioned here that at the site of the injection there appears a more or less painful infiltrate, although often this is inconsiderable. In order to lessen the pains

*Compare the circumstances in manic-depressive insanity!

†The results obtained with the Abderhalden reaction seem, perhaps, to suggest that there circulates in the blood the abnormally decomposed albumin from the genital glands. The primary cause, perhaps, lies deeper still, so that the dysfunction of the genital glands, i. e., the toxemia, the morphologic changes in the blood, and the psychical disturbances are merely symptoms of the same pathologic state. We do not know which of these three symptoms appears first; but everything goes to show that the psychical disturbances appear later than the morphologic changes in the blood.

and accelerate the resorption, I apply, during the first day, a cold compress, while the second day I begin with a cautiously applied massage, which is continued until the infiltrate has disappeared.

Some hours after the injection, a strong rise of the temperature and the number of leukocytes ensues, combined, occasionally, with spells of shivering and a feeling of illness. However, the elevated temperature generally recedes rapidly and usually is on its downward grade after twenty-four hours; still, now and then slight increases of the evening temperature will appear for some days afterward. The leukocytosis runs tolerably parallel with the course of the temperature, although usually it sets in some hours earlier, and persists for a day or more after the temperature is at normal again. Still, this parallelism is not pronounced, and leukocytosis not infrequently is found without there being an increase of temperature. Nor is the time for each new injection to be determined by the curve of temperature, but, instead, by the number of the leukocytes.

Since the purpose of the treatment is not, to throw a certain quantity of the remedy as quickly as possible into the patient's body, but, on the contrary, to sustain by the smallest possible doses a leukocytosis for as long a period as possible, there is no fixed rule for the dosage, and, so, one has to feel his way in each individual case.

Above all, it is useless, a labor thrown away, to content oneself with only a few injections. If the patient has acquired immunity to the remedy, so that no effect is produced even by large doses, it is best, temporarily, to interrupt the treatment and, after a while, resume again.

During the course of this treatment, the patients should be kept on a highly nutritious diet, and preparations of lecithin may, perhaps, be of a certain value.

In the presence of cardiac diseases and of phthisis, the treatment is contraindicated, or, at least, great caution must be exercised.

The injections nearly always are followed by improvement, lasting several days, in the patient's psychic state. When evaluating the results of the treatment, however, I have not taken this factor into consideration.

Before passing on to the account of my own cases, I will mention certain experiments conducted by others at the same time as mine, or later.

Lepine found, out of 12 cases of dementia præcox treated with sodium nucleate solely, a slight improvement in 3 of the patients. He gives no information, however, of the total doses he used, whence it is impossible to decide whether the treatment was carried out with all the energy required.

Itten has treated 9 serious cases, and in 3 of them observed a temporary improvement. One must say, though, that 4 of his cases, at least, had insufficient treatment. For, 2 patients received only 3 injections each, with a total dosage, respectively of 3.8 and 3.0 grams of sodium nucleate; 2 other patients received only 1 injection each, containing 0.8 gram. On an average, his patients received 5.8 grams of the nucleate. I have emphasized already that, if the treatment is to demonstrate anything, it is indispensable that one try to keep up the increase in the leukocytes for as long a time as possible.

Out of Donath's 14 patients, 3 were cured, 5 were improved (2 of these able to work), 3 showed signs of improvement at first but then deteriorated again, and 3 remained uncured.

Hauber has treated 20 patients, 12 of whom were diseased a long time and already considerably demented. In 2 cases, the treatment was not finished at the date of publication; in 1 case, the treatment had to be interrupted on account of a recrudescent phthisis. Seven of them could be discharged, subject to more or less severe remissions.

I myself have treated, in the manner above described, 25 patients, many of whom were old and their cases hopeless. Out of these, 11 could be discharged as clinically cured; 2 could be discharged not quite cured but able to work; 5 showed signs of improvement, but only temporary or else not considerable enough to permit of their leaving the institution; 7 remained uncured.

If, now, we take into consideration only those cases in which the treatment was finished, the results are these:

Of Hauber's cases, 37 percent could be discharged; and that in spite of the fact that 70 percent of his cases were old dement cases, i. e., with irreparable cerebral changes already developed. Of Donath's cases, mostly rather recent, the cured and improved aggregate 57 percent. Of my own patients, many of whom, however, were old and helpless, 52 percent could be discharged, while 20 percent showed signs of recovery, although temporary only or too slight to allow of discharging them.

However skeptical one may feel about this form of therapy, the results thus far obtained are quite too obvious to be neglected or to be passed over as spontaneous recoveries. More-

over, since the treatment is so simple as to be applicable by any ordinary practitioner, it certainly seems to be our duty to give it a trial, for so long at least as we are in want of a specific therapy.

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Sodium Nucleate

For the Induction of Artificial Leukocytosis in Dementia Præcox

By Bayard Holmes, M. D., Chicago, Illinois

The Clinical Motive

SINCE the use of sodium nucleate, as recommended by Halvar Lundvall, of Sweden, less than two years ago, in form of a subcutaneous injection, for the production of an artificial leukocytosis in patients suffering from dementia præcox, many very remarkable and almost incredible recoveries, although also numerous disappointments, have been recounted. After a single dose of this remedy, a patient mute for months has talked, asked questions, and started on a protracted improvement. Other patients have shown no reaction and no improvement after a considerable number of injections, and even after heroic and vigorous use of the remedy.

It is entirely too early at the present time to come to any definite conclusion relative to the worth of this treatment, nevertheless it is time that a review of the experience of medical men that led up to its use should be reconsidered.

In one hospital, where 20 patients received a very moderately vigorous treatment, the results were quite hopeful and were pronounced in the following particulars: The trouble of every one of these patients had been clinically diagnosed as being dementia præcox. Some of them had been in the hospital a long time and some only a few weeks, with the usual attending deterioration and decline. Every one of these 20 patients under this regimen, made some gain in weight and improved physically; no one of them was made worse by the remedy; and, yet, only 5 of the 20 were sufficiently benefited to be discharged from the hospital. One of them has been actively at work, for wages, ever since he left the institution. Half of the remainder were somewhat improved mentally, but 7 experienced only a little, if any, mental improvement.

Dr. F. B. Williams, of Lincoln, Nebraska, has reported, in the last number of *The Alienist and Neurologist* (vol. 35, p. 414), upon his use of the nucelin in 12 cases at the Lincoln State Hospital. He administered rather large doses. He had a variety of patients, all with the diagnosis of dementia præcox; among them, 8 were katatonic, 2 were hebephrenic, and 2 were paranoid. Under the treatment, 3 patients became distinctly worse after the injections, which were begun August 10, 1914, and continued less than four months; 2 showed no change at all; 3 were physically improved, but mentally unimproved; 2 were slightly improved both mentally and physically; 2 were markedly improved both mentally and physically.

It is not often that anyone claims that one-sixth of his cases of dementia præcox improve under any sort of treatment. It is generally presumed, though perhaps not often so stated in print, that the prognosis in dementia præcox is absolutely unfavorable. To this, the exceptions are so few that it is hard to get an alienist to admit that even a single patient under his observation has recovered permanently. One alienist of unusual clinical experience said in conversation with me that he believed *one* such patient whom he had observed early in his experience,

had recovered and had remained well and uncommitted to an institution up to the present time or, twenty years. This was the only experience of the kind that he could remember.

Data About the Induced Leukocytosis—and Some Typical Examples

Physicians who have undertaken to employ the sodium nucleate according to the directions of Lundvall have uniformly reported the efficiency of the drug in producing a leukocytosis.

The remedy has been given in doses of from 1 to 20 cubic centimeters of the solution recommended in my article in THE AMERICAN JOURNAL OF CLINICAL MEDICINE for May, 1914, page 396. The number of leukocytes was determined immediately before the injection and at suitable intervals afterward. It has been distinctly noticed that in some instances remarkable and rapid improvement took place, and in these cases the number of leukocytes had increased to 20,000 or more; in other patients, however, the rise in leukocytes was small and slow and the improvement inconsiderable or transient.

The duration of the leukocytosis is another unexplained peculiarity in this connection. In most patients, the leukocytes appear at their maximum after twelve hours, then gradually decline, so that at the end of six or ten days they number below 10,000; in other patients, on the other hand, the leukocytes rise to 25,000 or more and remain above 20,000 for several weeks.

In the case of A. P., a paranoid Swede, 21 years of age, 6 feet and 1 inch tall, and weighing 152 pounds at the beginning of the treatment, the most pronounced and protracted leukocytosis appeared after the injection of less than 5 cubic centimeters of the Lundvall solution. After one ordinary injection, his leukocytes rose to 35,000, remained above 25,000 for four weeks, and gradually decreased to 15,000 at the end of five weeks; at which time another dose was given. This patient improved both physically and mentally. He had no unusual pain from this injection and no more induration than usual.

It will be observed that in most instances the eosinophile blood-cells keep up, in the artificial leukocytosis, to the normal of 2 1-2 percent, or even a little higher; the neutrophiles remain about normal; while the polynuclears rarely exceed their normal proportion. In one instance in which the eosinophiles increased more rapidly than did the other blood-cells, the patient showed a most rapid and permanent improvement. He was a Jewish boy who had been confined in two different institutions. The diagnosis everywhere had been that of dementia præcox, and when I first saw him I confirmed this diagnosis by every physical means.

After the first injection, this boy "changed his mind," as he said, and "no longer thought of suicide and starvation." He began to take food voluntarily and, although being under anything but favorable conditions at his home, he has gained 25 pounds. He went to work in February, 1914, and has continued at the same job ever since. When last I saw him, in October, he weighed 146 pounds, and he was tidy and orderly in his dress and modest and animated in conversation. The treatment was continued for only two months, the leukocytes being kept continuously above 15,000. The injections were given as often as twice a week, as guided by the blood count. The eosinophile cells were conspicuous and above 3 percent. This boy noticed that his beard and mustache grew unusually fast after the injections were begun.

Some Interesting Cases

The katatonic granddaughter of a physician had been mute for several months and had refused food, so that often it became necessary to feed her with a tube. After the injections were begun, she took notice of things about her, asked for her clothes, dressed herself, and did up her hair with great care and circumspection, spending an unusual time with the comb and brush. She became perfectly tidy and fed herself, eating at the table with the family, a thing she had refused to do for more than a year. The treatment was begun in June, 1914, but was discontinued in September, when, owing to her activity and lack of self-restraint, it became necessary to take her to a custodial institution.

The son of a physician, while attending a military school, came down with typical symptoms of dementia præcox when he was 19 years old. He was sent to a sanitarium in the West, because some restraint was necessary. He began to take the sodium nucleate in September, 1914, and since that time has made such improvement that he no longer has to be restrained, is active and curious, and wishes to continue his studies. He rides alone on horseback and goes to and from his private tutor without a companion. His parents are greatly cheered and hope for permanent improvement. The reac-

tions were very pronounced under a dosage of 6 or 8 cubic centimeters of the remedy.

Uncertainties with Nuclein

While there can be no doubt about the beneficial effect of the sodium nucleate in at least one-sixth of the cases of dementia præcox, the action of this remedy as now given is uncertain and fickle. One patient in particular illustrates this fact.

This man had always shown a lively reaction to 4 cubic centimeters of the Lundvall solution. The preparation had been acting very satisfactorily in his case during the six months immeditely following his return from the Watertown State Hospital, where he had been kept for nearly two years. After each injection, his leukocytes always rose to 20,000 or more, and continued above 12,000 for about two weeks. When the leukocytes fell to the latter point, another injection would be given. From the first, he improved considerably, both physically and mentally. He gained in weight, the condition of his skin improved, acne disappeared, and his tongue and gums became more normal. He also read the newspaper and kept up a very fair social life with his neighbors.

Then it happened that one bottle of the Lundvall solution failed to induce any reaction. At first it was thought by his physician that the patient had become immune; consequently, a larger dose was administered. This produced but a very trifling reaction, and then for the third dose a site in the leg was selected from which absorption would be rapid. Still there was no reaction. Therefore a second bottle of nuclein solution was obtained, and the usual 6 Cc. dose was followed by a reaction as lively as ever before. What remained of the first bottle, however, afterward was used up in the case of two or three patients and they exhibited a moderate reaction as to temperature and leukocytosis.

I have just received a letter from the young man referred to, and his chirography is strong and regular, his spelling good, and he writes a clear and consequential plea to be allowed to go to school this winter. He tells me that he has behaved all summer and that he has worked some; that since his mother's return from a sanitarium for tuberculosis, she has not done well, still stays in bed all the time in her tent house, and that she probably will not live very long. He thinks that the family relations are not very good and that there is too much disputing between different members of the family. He says that on this account he would be a great deal happier, enjoy himself better and get well faster if he went back to the school, which he was obliged to leave two and a half years ago. To my certain knowledge, there is too much disorder and too much friction in his family.

The Probability of Cure or Betterment

The efforts made to find a remedy for this disease have been numerous. Mercury was found to be a specific remedy for syphilis before the cause of syphilis was known. Quinine was used against malaria before the causative parasite was discovered. For amebic infection, emetine is almost specifically potent for cure. There is no reason in medical history why a remedy might not be found for dementia præcox even before we know the etiology of this terrible disease. As a remedy for cancer has long been sought, even though its cause is a mystery, so many methods have been employed to cure the adolescent insane, although thus far without much success.

A remedy usually is selected for trial with some analogy or some special theory in mind. When the vaccines were coming into use at the end of the last century, Binswanger (*Arch. f. Psych.*, 30, p. 664) used injections of sterilized cultures. Cullerre, of Lyons, and De Boeck, of Belgium, made similar experiments at about the same time (1898-1899).

The clinical experiments leading up to the use of sodium nucleate were reviewed in my previous article. It has never been suggested by Lundvall or anyone using the sodium nucleate that this remedy is a specific. It has simply been a method of increasing the army of repair and of resistance in the blood.

There can be no doubt that dementia præcox is a consequence of a toxemia. The character and the source of the specific toxin are unknown. There are times when an individual suffering from this toxemia seems successfully to resist its baleful action, and to improve or actually recover. Let us suppose, for example, that the resistance of a patient to the toxemia of the disease is represented quantitatively by 100, and the power of the toxin by 120. Under such a condition, the patient succumbs to the increasing toxemia. If by any means the resistance of the patient can be increased to 130 or more, the credit will be on the side of the patient and improvement or recovery will take place.

It has been argued by many and assumed by us that a leukocytosis increases the resistance of the patient to any toxemia and especially to the toxemia of dementia præcox. If this increase is sufficient in any case to overreach, with the natural resistance of the body, the toxic elements of the disease, then improvement or recovery follows. Such a conception emphasizes the need of using all accessories and surroundings favorable to recovery from a condition of unknown origin.

Let us consider now several factors in this problem, namely, the nucleates, the leukocytes, and the presumptive toxalbumin of the disease.

The Nucleate of Sodium

It is perhaps worth while to consider for a moment the relations of the nucleate of sodium to chemistry, pharmacy, and medicine.

The nucleates always have held a novel and conspicuous place in the attention of chemists and physiologists because nucleic acid is derived from the nucleus of the cell.

In 1868, Friedrich Miescher, of Hoppe-Seyler's laboratory in Tübingen, undertook the chemical examination of pus. He secured a great amount of surgical dressings from adjoining hospitals and carefully washed the pus-cells out of them with a dilute solution of sodium sulphate in water. After standing for a time, the pus-cells settled to the bottom of the solution and were then separated by carefully decantating the supernatant liquor. The residue thus obtained was washed several times, and finally the cleaned pus-cells were suspended in a dilute salt solution. The outer protoplasm of the cells now was removed by digestion in artificial gastric juice. The resulting nuclei of the pus-cells were still further purified and at last dissolved in a dilute sodium-carbonate solution. From the clear solution thus obtained, acetic acid brought down a flocculent precipitate, which Miescher called "nuclein," because he supposed this substance to be the base of the nucleus. He found it to contain phosphorus, and it responded to the color-test for protein.

Experiments with Salmon

Miescher afterward went to Basel and became engaged in the study of the chemistry connected with the salmon industry. He took advantage of his position there to go on with his study of nuclein. He was able to prove conclusively that the salmon, entering the Rhine, for the purpose of ascending to the breeding-grounds at its sources, took no particle of food into their digestive tracts from the time that they left the sea until after the eggs were deposited. Their alimentary tracts were absolutely empty and their digestive fluids were inactive. The reproductive organs, however, had grown enormously, while their muscular tissues had been gradually consumed. The eggs and the milt (spermatozoa) had been formed from muscle-tissue protein.

During the spawning-season, great quantities of spermatic fluid can be pressed out of the male fishes. Miescher found that the milt was composed of spermatozoa suspended in a dilute salt solution. He recognized fully from his study of comparative histology of the genital organs that the head of the spermatozoon corresponded to the nucleus of the cells of the testicle from which it arose. The tail of the spermatozoon constituted a very insignificant proportion of the body and could easily be dissolved away.

Thus, Miescher had at hand an enormous quantity of extremely pure nuclei for chemical study. He was not very long in determining that the head of the spermatozoon of the salmon was a combination of protamin and nucleic acid. From this discovery on, the study of the nucleins has been a most prolific, fruitful, and suggestive field of chemical research.

Most of the nucleates of commerce are derived from yeast; strangely enough, the yeast-cell has no recognizable nucleus itself. Hoppe-Seyler prepared nucleates from yeast in 1871. It was early observed by him that the properties of the nucleic acid of yeast and the properties of those nucleic acids derived from salmon milt were chemically different. Still later, other investigators (e. g. Lilienfeld) prepared nucleic acid from the thymus gland of calves, and this latter product showed a still greater deviation from that of yeast in many of its hydrolytic features. The method of preparing thymic nucleic acid has now been perfected and has been described by Walter Jones. Much study has been devoted to the chemical side of this subject; still, the physiologic side has not been as well cleared up.

Kossel found that nucleic acid from yeast differed from that of thymic origin, and subsequently it has been demonstrated (Stephan) that the yeast nucleic acid, upon hydrolysis, yielded phosphoric acid, four purin bodies, namely, guanine, adenin, cytosin, uracil, and a ferment termed pentose; while nucleic acid derived from the thymus gland yielded phosphoric acid, guanine, adenin, cytosin, and thymin, besides a ferment

termed hexose. These findings have been confirmed by a great number of biochemists, so that Stephan declares that these facts are among the most firmly established conclusions of physiologic chemistry.

Now, every purin body contains the radical C_5N_4, which, combined with H, gives a purin formula $C_5H_4N_4$. If an amid element, NH_2, combines with a purin element, we have adenin, $C_5H_5N_5$, the first purin body in the hydrolysis of both nucleic acids. If, then, the adenin take on an acid atom, O, we have amino-oxy-purin, the socalled guanine, $C_5H_5N_5O$. If the purin unite with O directly, then we have $C_5H_4N_4O$, oxy-purin or hypozanthin. If the purin unite directly with the O_2, we have $C_5H_4N_4O_2$, i. e., xanthin, or dioxypurin. If, again, the purin unite with O_3, the result is trioxypurin, $C_5H_4N_4O_3$, i. e., uric acid, or uracil.

This series can best be appreciated by the following table:

By hydrolysis the end-products are:

Thymic Nucleic Acid	Yeast Nucleic Acid
A. Phosphoric acid, PH_3O_4	A. Phosphoric acid, PH_3O_4
B. 1 Adenin, $C_5H_5N_5$	B. 1 Adenin, $C_5H_5N_5$
2 Guanine, $C_5H_5N_5O$	2 Guanine, $C_5H_5N_5O$
3 Cytosin (Xanthin), $C_5H_4N_4O_2$	3 Cytosin, $C_5H_4N_4O_1$
4 Thymin	4 Uracil, $C_5H_4N_4O_3$
C. Hexose	C. Pentose

There is, then, a considerable difference chemically between nucleic acid from yeast and nucleic acid from the thymus gland of calves. If these chemical differences between the acids are carried ove and exhibited in the sodium salts, then we might expect a corresponding difference in their physiologic reactions and, consequently, their therapeutic usefulness. This matter will be presented in the following portion of this paper.

An Old Doctor's Life Story

An Autobiography

By Robert Gray, M. D., Pichucalco, Mexico

EDITORIAL NOTE.—This autobiography is distinctly unusual. It is not the usual trite story of medical triumphs, but rather the intimate record of the unfolding of an unusual life. Doctor Gray was born in the Old South, was educated in France under the old regime, fought through our great Civil War, and soon after plunged into the very depths of tropical Mexico, where he has spent his life. We promise you in this autobiography one of the most interesting series that it has been our privilege to offer.

Three Subtle Mysteries

NUMEROUS letters of many forms and shades and degrees of persuasive importunity have found their way down here into the dreamy gossamer of tropical enchantment, seeking to conjure into the limpid daylight of the realm of bright life an *autobiography*.

Part of the foregoing words might seem to justify the inference that sable gloom pervades these haunting lurks of mystery, where the balmy atmosphere eternally distils the quintessential perfume of ten thousand flowers, responsive to the winsome smiles of never fading summer. Aye! here angelic attributes might make a paradise, to rival that which the inspiring genius of Milton made Eve so pathetically lament. The shadowy frowns that darkle over the fair face of Virgin Nature are offsprings of war —inhumanity of man to mankind—breeding diseases that decimate the race in these lands.

An autobiography is a delicate proposition; and often would be more interesting if overbrimming with little things the author may deem too insignificant to recount. Little sideshows scattered along the backward track of life often are more interesting to the reader than the more imposing scenes enacted on the public stage. The inward, or double, life of a physician, that which one naturally would keep behind the scenes, should permeate the practical story, even in a predominating degree. I have been advised by professional men of the first grade, to meet the expectation of a critical fraternity, maybe rather more human than professional.

I have ground out many medical contributions without the will, some of which were not criticized out of countenance, though not one was ever up to the standard to enlist my own enthusiastic approbation; for which reason I am reluctant to essay the pending task.

Naturally I have no means of even adequate conjecture as to the occult life of any medical man, living or dead, and do not believe such true story has ever been told. However, it seems to me that I need not be

squeamish about lifting the mask from such integral elements of my own life. Whatever of my clandestine life may have been inimical either to social or to ethical propriety, if such be recorded for eternal accountability, as men esteemed holy have affirmed is the fiat of Fate, my professional confession certainly could not seriously prejudice inevitable destiny. If the quips and slips of imprudent straying must be unmasked beyond Futurity's veil, why wince and squirm about revealing them to flesh and blood, when they might prove a mirage reflecting to others the waywardness of themselves?

I believe that we are all agreed that *the saintly* is not an element of human flesh and blood. Most of us have a swaying proneness to stray in devious paths, actuated by diverse influences, maybe scientific, maybe carnal. Let us not mince terms in the dissection of professional anatomy. We are barnacled with shady truths rarely recognized. Let us unmask and expose our purulent leprosy; so we may not delude ourselves, however much we may deceive the world.

The actuating motive to write such an autobiography should be, to lend helpfulness to members of the profession who have not met the experiences outlined in the pages of such essay, as well as to show the doctor his own foibles and follies, which he rarely pauses to contemplate himself.

For now more than three decades I have been esteemed *the model man* of this broad, far-expanding tropical realm; and, truly, my life has been the veritable semblance of a perfect Anchorite; yet, it must be remembered that before the inception of that fairly blameless epoch, I had lived out the years most medical men rarely pass. A doctor fifty-five years old is not as wayward as he may have been at twenty-five. Wasting time unteaches some hapless lessons it were better never to learn. But what are you going to do about the human nature in the doctor, any more than that in the priest?

In my long career of intense vicissitudes, I have been absolutely true to no more than three principles: the preservation of my health; the Confederate cause; and my professional obligations, in all the bearings of their multiple relations.

The first of the three subtle mysteries with which an autobiography should deal is early life and the predominating influences that mold and guide the precarious adventurer through the meandering labyrinth of tender years. Not all endowed with talent and capabilities to ascend to the plane of aspiration are favored with requisite opportunities to prepare and arm themselves to cope with the formidable obstacles that inevitably intervene. As to the adaptability of the presumptive material, there rarely are widely diverging grades of superiority and inferiority, all being so nearly on a par that the impulse of equal advantages would leave but few in the straggling rear of mediocrity.

On the Threshold of Life

I presume that scarcely one in a hundred has the favorable start that was mine, with no check nor setback anywhere. Credit for having battled successfully against direful opposing difficulties I cannot pretend to claim; because I knew not the practical definition of such combat, save that I was forced into a profession contrary to my predilection, in which I had sufficient common sense to acquiesce and make the best of what I could not honorably escape.

The years passed under the friendly roof of the venerable and ever venerated Alma Mater comprise the epoch of destiny-making influences, which expand and unroll the preparatory exercises, or else mar and blight to deterioration, through contact with deleterious association; for, there ever are some collegiate black sheep in the best-selected and most-carefully groomed flock that ever met under the brooding wing of the most benignant curriculum; and they exercise a pernicious sway over other shallow pates, more taken to passing frivolities than serious preparation for the coming battles of life. Ambition and family pride often save those who succeed in the first grade.

In saying this, I certainly do not refer to all who carry home such a diploma; for, many unworthy of such distinction are coached and bolstered through examinations they could not legitimately pass; nor does this imply that some such do not finally succeed in making of themselves fairly competent clinicians, because sheer remorseless necessity sometimes stimulates studious activity and indomitable application that better-qualified graduates do not prosecute. An incompetent bright mind frequently masters such deplorable deficiency before there is an outside suspicion of its existence, and covers up and remedies it with an energy spurred by despair. What is more maddening to a proud and lofty mind than the haunting specter of failure in a profession wherewith his all in life is embarked?

Between the admittance to college and the gaining of the diploma is the epoch in which

the second mystery develops or slumbers in heedless apathy. The collegiate mystery often is as evasive as the intangible form of a haunting specter, that seems invisibly flitting near.

The third mystery nestles, from the threshold of the college, as a phantom sphynx, all along the stony pathway of thorns, to the portal of the Silent City! And what Never-Told Medical Mysteries are strewn along the dreary tracks of so many desolate backward tracks! I shudder at the bare memory of the experiences personally familiar to me. I have letters upon letters from the widows of young and middle-aged doctors who fell by the wayside, leaving their hapless families in pathetic destitution. And from such unmarried aspirants, blighted and withered on the stalk of Hope, trembling on the brink of premature graves—victims of dissipation or insufficient constitutional stamina—while others were the victims of heroic martyrdom, voluntarily sacrificed in the shambles of slaughter of immolating epidemics. What is more admirably beautiful in our dark mortality than the vision of medical heroism, emerging from the salubrious freshness of mountain refuges, to plunge into the insatiable jaws of ravenous pestilence, amid the fetid marshes, seething beneath the vertical glare of the torrid sun? These are horrors fortunately unknown to most of those who are likely to linger in pensive scrutiny over this mournful portraiture of our intrepid brothers, who undauntedly enter with blanchless cheek "where Minerva might quake to tread!"

Our noble and ennobling profession is inseparable from faults and frailties, yet, so invincibly heroic amid the darkling menace of wondrous peril, where I never have heard that a white feather was seen above the pausing footstep of a medical hero, that the grandeur of soul submerges and eclipses all that which might else be deemed wicked and vascillating; till it seems to me that the recording angel sometimes must be impelled, under the sheer dictates of admiration of mortality above all that is mundane, to liquidate all transgressions and pass a handsome credit balance to a new account.

A Promise

Should this essay develop any modicum of tangible merit, the net result is hereby dedicated to the most distressed and needy elements of the medical profession, whether as a home for invalid indigent doctors, or, otherwise, as may be most conducive to such wants as may be determined by a committee to be selected by the editors of THE AMERICAN JOURNAL OF CLINICAL MEDICINE.

As a personal financial enterprise, no sum ever paid for a literary venture would induce me to write one page of the many pages I must deface. I have no need of money to be earned by bending me over the drudgery of composition; and anyone who writes much or but little must readily realize that this is no festival task for a man eighty-five years of age. Yet, actuated by the double motive of helpfulness to stray doctors and of possible assistance to some bereaved families left by others who have perished in harness, I can ignore the inconveniences of the task with the same cheerfulness with which I respond to the call of a desperate patient really inconvenient to visit.

The Tempestuous Midnight

October, 1829, amid the weird purple of the lamp flickering in a stormy midnight, that infantile squeak familiar to the midwifery of earth announced that I had been ushered into the sweeping surge of breathing humanity, the warring elements prognosticating the wild and turbulent life I was to experience through the violent vicissitudes of so many terrible years. And, can it be possible that I am starting to live them over anew, as the mocking specters flitting over this growing page seem to indicate?

I was told, in due course of time, that the phantom shadows of night were rife with the predictions of my ancient kinswomen; that the 31st verse of a chapter in the Bible presaged that the horrors of war were of my troublous destiny, that verse corresponding with the day of the month of my birth. But I have long since forgotten what chapter was the malicious prophet whose divination seems to have been verified with cruel accuracy.

Long years ago I knew something of the geneology of my family for some five or six centuries back, including the lapse of time since the age of blending with the Jamestown settlement; but now I can recall nothing sufficiently positive to place into a living page, more than that the mother of my race and line in the United States was bought with 500 pounds of tobacco at Jamestown; and that the men lived out their century, save when violence of war or accident intervened. Nor can I recount how my immediate family became extensive land- and slave-owners—the status at the time of my birth.

The kinship feature of my tender years centers around a cousin of my father (that

is of vital importance to these pages), who had been a nun for fifteen years, having escaped from the shipwreck of love to a convent, the nature of the affliction in the soft side of her heart not being legible on the tablet of my memory at this late day. She had been educated at Paris ere her advent in the sisterhood—that womans' sable orphanage of the heart—whither she took refuge, to dawn, it seems, upon me like a fragment of a half-forgotten dream, because her lover had a slave-mistress—an unpardonable crime in my family.

That good woman was a professor in a nearby college and lived in the home of my father. She had studied medicine in the convent. Ere I could clearly articulate, she had taught me to read; and her care of my mental development was as persistently delicate as that of a fond girl nourishing an exotic plant of extreme tenderness.

The church dominated her communicants with an iron despotism, balls and ordinary sociables and the reading of "unholy" literature being interdicted with relentless severity, while parents were admonished from the pulpit, Sunday after Sunday, not to spare the rod in the dicipline of their sons.

I had a wealthy uncle, a bachelor, the brother of my mother, ever at open rupture with the church, who contributed much to my early mental training, by supplying me clandestinely with literature not permitted in the family (certain classics and poetry and scientific essays, approved by my preceptress, when I was early nominated a martyr to medicine) of intrinsic helpfulness; for, in that age there was a great dearth of such literature in family circles, due largely to the influence mentioned, as also to limited production at moderate prices.

My father and his near relatives were extensive distillers of apple and peach spirits and manufacturers of plug and smoking-tobacco; also producers and buyers of leaf tobacco. In addition, they had, in copartnership, big water-power saw- and grist-mills, carpenter-shop, cooperage, and blacksmith-shops.

I was permitted to tinker in all the shops while I was yet too small to do much, but finally learned to make a good barrel; do neat carpenter-jobs of trinkets, and make anything I desired of iron and steel. I was a good swimmer in the vast mill-pond that rivaled a modest inland lake, while still too young to have been permitted to venture so far; and I rode colts of one and two years, without bridle, in a great stumpless pasture, clinging to the mane, till the animals tired themselves gentle, after first standing on their hind feet, plunging and running furiously; they having been caught by slaves clandestinely and held till I was securely mounted—adventures unknown to my father, whose rigid compliance with church-mandates early made a rebel of me in more than one eventuality. Thus I early developed into a powerful athletic boy, far in advance of my years.

The First Amour

Then, amid that sagacious guidance, strict family life, and under pious environment, there appeared upon the scene the temptress fair—

> Here fond Zuleika woos with open arms
> The Hebrew boy, who flies from her young charms,
> Yet, flying, turns to gaze, and, half undone,
> Wishes that heaven and she could both be won.

But, alas! I was less firm than Joseph, or lived in a more elastic age; and whether with or without inclination, I had not the same means to fly. I was very young. I am unable to fix my years at the inception of the lapse from the heroic attitude of Joseph, though I was very much younger than my appearance indicated.

The object blended with me in the dark intrigue was a young woman maybe of eighteen summers or slightly less, a seamstress in the family, of good parentage, whose family had been impoverished, I do not know how; because her mother and mine had been classmates at college, the erratic daughter found a home under the friendly roof of my father.

In those old plantation houses inside doors were not bolted nor barred. There had never been a word of private conversation between the girl and me. Yet, I awoke one night and found her in my room. When she realized that I was awake she whispered me to be quiet; she was my companion; and that no harm would befall me. I was naturally more alarmed at the danger of exposure than she could have been, as my father would have believed that the initiation was my crime, and would have punished me accordingly.

Thus the mystery of mysteries of creative mortality was revealed to me amid the haunting silence of weird night, the imaginary creaking of the stairway resounding under the stealthily approaching footstep of my father, who all the while was innocently sleeping in a distant wing of the house.

I am unable to recall the length of time that elapsed meanwhile those nocturnal visits continued; but I remember certainly that there were three Christmas holiday seasons celebrated.

In my sober, cold-blooded conception, I now believe that this intimacy for such a long lapse of time developed premature puberty, two years in advance of its age. But there is to be considered that a few nights after the last visit of the girl, I began to read the works of Voltaire and Rousseau in my room at night, obtained from the library of my uncle, desisting only when the candle burned out; and that I had no resource whence to feed such untimely appetite, had it been established more positively by continued indulgence at the time it was abruptly deprived of its vicious companionship.

But do not understand that I am playing the "goody-goody" act of Adam, by pretending that all the blame was on the part of the woman; because my door was provided with strong double bolts, which were never slipped in their sockets. Nor do I claim that I might not have invited the visits, at a later period of life, had there been any temptation flung in my way, indicating that intimacy might be acceptable. Yet, I had never had such mere passing suspicion that the girl might have been capable of any degree of imprudence, till I awoke and found her in my room. She married and soon migrated to the far West. I never met her after she left my room the last time.

Natural puberty developed some two years after my unfortunate intrigue was interrupted, which did not seem to have prejudiced my health.

The Sweetheart and the Daredevil

In the meantime I had a legitimate sweetheart, whom I went to visit every Saturday evening, we being left to ourselves in the parlor about eight o'clock, the mother rapping on the door when she deemed that the séance should close. We were playing chess one evening, heedless of all else save the rap on the door, which we awaited, till the plantation bell rang the morning-call to the people to wake up. The mother had slept. I never in all my life passed another night so sweetly short.

Another night she was playing on the piano and singing, I standing behind turning the leaves of the music. At the conclusion of the piece she swung round the revolving seat facing me, and seemingly in a freak of mischief turned up her face toward mine. I have never realized what possessed me. But I kissed her. She arose furiously, saying, "Robert, if you ever dare attempt such atrocity again I shall tell my mother; and you well know the consequences." I grabbed my hat and hastened home.

My uncle gave a ball every month to such youngsters as could get out of their homes after the old folks were in bed and return ere they were up. He had fine musicians among his slaves. I slept in the third story at home and had three sisters who slept on the first floor. He provided me with a rope ladder, and hooks to drive under the window-sill to hold it, so that I could get out and back to my room at will when the house was closed. But I was absent from the party the week after the scene with my sweetheart and made no other visit, nor even wrote her a note, till the ball a month later, when I found her there on my arrival with my sisters, whom she at once kissed, and came toward me, hand extended, saying "what have I done to receive no visit or other greeting for six weeks?"

"And then you have forgotten the scene at the conclusion of my last visit?" I promptly rejoined.

"Hum! and you imagine that I am so foolish as to carry such a piece of news to my mother?" was her reply.

That fairy form and lofty mind—the queenly nympholepsy of poetic despair—became the pure planet of my life in later, far darker years, amid the seething surge of flame and blood, on a fratricidal stage of horrors.

[*To be continued*]

The Treatment of Pneumonia

By J. G. Walker, M. D., Iola, Kansas

I WISH to preface this paper by quoting from Elsner's chapter in Forchheimer's "Therapeusis," as follows:

"Therapeutic nihilists have done incalculable harm by their unjustified pessimism concerning the treatment of pneumonia; on the other hand, the therapeutist who treats disease expectantly and symptomatically, who fails to appreciate the dangers which may often ('tis not always true) be prevented, will finally find himself face to face with alarming conditions, at a time when his treatment will have been instituted too late."

Butler also quotes a noted Chicago surgeon, who "publicly announced that treatment of pneumonia was futile." And Elsner says, "The lay press was prompt to take up this statement;" and adds: "It is unfortunate that such pessimistic and sensational literature should add fright to infection and should strengthen the belief in the minds of many that pneumonia has become a synonym for fatality—a conclusion unjustified and one which results disprove."

It is, indeed, refreshing to observe this hopeful attitude in a recent and exhaustive work that emanates from a conservative and orthodox source, and, so far as it goes, is a deserved rebuke to some of the credited authorities who are so fond of whitewashing their failures by saying pneumonia belongs to the self-limited class of diseases, and there has been no advance in treatment since a date before the younger, if not the older, practitioners were born.

Treatment Most Important

The most important branch of medicine is treatment—first, last and all the time. Only to the degree to which our treatment is successful is our practice successful. True, we must arrive at a correct diagnosis and pathology as a solid foundation for the superstructure of active rational treatment. But many there have been who have died of a correct diagnosis.

I have heard of a professor who said to his students: "This patient, as we shall some day prove by an autopsy, has consumption." The patient grew worse and went to a notorious quack who said: "It is not your lungs, it is your liver that is diseased," and he treated him for disease of the liver. In due time the patient died of the former diagnosis. The professor itched to humiliate his enemy, the quack. So, he secured an autopsy and invited his friends and the quack. Addressing the latter, as he held up the lungs, he asked, "Do you call that a normal organ?"

"No sir, it is badly diseased."

Then the professor held up the liver. "Do you call that a normal liver?"

"That, sir, is a normal, healthy liver," said the quack.

"And you treated this man for liver disease?"

"I did, sir."

"And what did he die of?"

"It is plain," said the quack, "that he died of consumption."

"Well, then," said the professor, straightening up to his full height, with a smile of victory as he looked over his admiring friends: "What have you to say for yourself? You treated this man for liver disease and you say he died of consumption."

"Well, I just have this to say for myself. If you, professor, had treated the lungs as well as I treated the liver, the patient would be a living man yet."

Many have died of a correct diagnosis. We have heard it said more than once, "Make a correct diagnosis, and the treatment is easy." Is it? There are even those who do not take to heart very much the death of the patient if only they can tickle their pride that they knew what was the matter and at an autopsy can say, "I told you so; he died of this." A correct knowledge of pathology and of diagnosis are, indeed, essential, but successful treatment is the all-important thing.

Pneumonia has, for a long time, been called a self-limited disease. That is to say, it is possible for a case to run through the regular classical course of chill, fever, congestion, hepatization, crisis, and resolution, with return to normal health, without any treatment whatsoever. If the vital forces and resisting-power of the patient more than balance the virulency and quantity of the infection, then the patient has a chance to win, left even to nature, in his fight for life; and penumonia is always a fight for life in which the patient passes hard by the brink of the grave.

And I would hasten to agree with everybody that pneumonia is absolutely a self-

limited disease. If the patient cannot limit and overpower the army of infection that is besieging him and the doctor fails to assist nature to limit the infection, pneumonia, like fire, stops when the building is consumed.

There is no routine treatment for pneumonia. You cannot give every patient the same general care or the same medicines or doses. We must treat the patient as well as the disease.

Importance of Fresh Air in Pneumonia

Every patient should be kept in the recumbent position, but should change from one side to the other even if only for a short time. When possible, an abundance of cold fresh air should enter the room, but without drafts. This may be accomplished by raising the windows and tacking thin muslin over the open space. I believe it is a mistake to keep the room too warm, even though the air is pure.

Doctor Bridges, dean of the College of Medicine of the University of Nebraska, says: "I have come to consider fresh air as a very valuable aid in treatment, even to having the patient in rooms too airy for the well." The eastern hospitals treat cases in the open air, sometimes on the roofs; and Elsner says: "So long as the patient is warm, it does not matter how low the temperature," and says, "pure cold air accomplishes more than oxygen inhalation."

This is in keeping with my own experience. Once I visited a pneumonia patient, who had been doing well at my former visit, and found her cyanotic and suffering intense dyspnea. The parents, disregarding my instructions, had closed up the house and set a redhot stove by her bed. They said they could not get her warmed up and believed she was dying. I was afraid that was to be the result, myself. The family was large and they had all assembled in this small room for the final scene. I requested all to leave the room and shut off the fire, and drew the covers over the patient's head. Then I raised the lower sashes, completely, of an east and a west window and allowed a strong wind, with temperature below zero, to blow through the room, which changed the air instantly and completely. I then lowered the windows and uncovered the patient's head. In a few minutes I repeated the process. All bad symptoms disappeared like magic, and the parents saw to it that there was fresh air during the remainder of the girl's illness. That was the only measure that would have saved that patient, and I was not sure that even that would do it, so extreme was her condition.

Many of our pneumonia cases are in small rooms. Do not allow unnecessary attendants and by no means useless visitors to use up the oxygen and poison the air by the exhalations.

The patient should be given a warm sponge bath daily, and an ounce of epsom salt may be added to each gallon of water. During the bath the patient should remain entirely passive and the nurse should exercise care not to fatigue the patient. The bath is best given when the fever is highest and may be continued for antipyretic effect or repeated as required. An ice-bag to the head is good practice, as it relieves headache, brain congestion and delirium. The feet, on the other hand, should be kept warm and dry throughout the attack, and at certain stages this may require drying the skin of cold sweat as also the application of hot mustard packs or of dry heat.

A Clean Intestinal Tract Important

The bowels should be thoroughly evacuated as soon as possible after the onset of the disease and kept open daily thereafter. There is an old Swedish maxim which makes a good rule for health, and we should try to establish it in every case we treat: "Keep the head cool, the bowels open, and the chest and feet warm." We see violations of this on the street every day. A mild laxative is often all that is required.

But many of these patients are bilious and constipated at the onset, which is one reason, I believe, why the ubiquitous pneumococcus and other organisms as causes or factors become suddenly active, with pneumonia as a result. In such cases, there is nothing better than small doses of calomel and podophyllin half hourly, followed by a laxative saline and this to be repeated until the bowels are thoroughly cleared. I think this should be followed in every case by an intestinal antiseptic, of which I prefer the sulphocarbolates or arsenite of copper, given every two of three hours; for, today we believe pneumonia is, or becomes, a systemic toxemia as well as a local infection and congestion of a lung area.

No one claims that we can sterilize the alimentary tract, but the proper use of intestinal antiseptics pushed to effect, as indicated by stools no more offensive or less so than in health, we can render the bowels as sterile as in health. If this matter of alimentary toilet is neglected, no inconsiderable

part of the increment of fever comes from autoinfection. Furthermore, we may avoid the later symptoms of tympanites so prone to supervene in severe cases of pneumonia, causing dangerous pressure upon the heart and lungs. When flatulence does occur, I have found a laxative, followed by intestinal antiseptics combined with asafetida, to give relief. At other times an enema or a rectal tube left in the rectum relieves it.

Pleurisy as a Complication

Pleurisy is one of the most distressing symptoms to treat. In some cases the affected area of lung is centrally located, so that there may be little pain. But in the majority of cases there is considerable pleurisy, and when you get a pleuropneumonia with extensive involvement of pleura, you have a most agonizing condition to face, and it will tax any physician's ability to relieve it.

I believe the patients most likely to suffer intensely from pleurisy are those who give a history of previous recurrent attacks of primary or idiopathic pleurisy unassociated with pneumonia. I believe also that the patient who suffers severe and prolonged pleurisy that baffles treatment is the very patient who will be most likely to have an effusion that may be absorbed or become an empyema.

There is no one thing to do as a local measure that will stop or even mitigate the pain of pleurisy in all cases. Drycupping over the painful area sometimes gives magical relief. In others, oil of gaultheria or mustard relieves the pain. And various proprietary and other counterirritants may relieve or utterly fail. Perhaps the reason may be that in some cases we are dealing with a pleurodynia and in others with an inflamed pleura.

But there is no one measure that will give more comfort in pleurisy and elicit the gratitude of the sufferer than to splint the affected side with adhesive straps; beginning at the spine on the well margin and continuing around the affected side, stopping at the sternum on the well margin. But they must be pulled tight. I apply the strips as low down on the thorax as possible, covering the seat of pain, and leave as much affected surface above as possible for counterirritants. I admit that splinting with adhesive plaster conflicts with the use of irritants where most needed. But these may be used first, being careful not to blister the skin; or the painful area may be drycupped.

It should always be remembered that zinc-oxide adhesive plaster can be removed without annoying the patient in the least by wetting the line of cleavage between skin and plaster with gasolin. Above the plaster I rub into the chest two or three times a day oil of mustard in camphorated oil or iodine in petrogen. The latter may be covered with a thin compress and stork sheeting.

Some Internal Measures for Pain-Relief

Internally, codeine or heroin, to sedate the pain and allay painful excessive cough, should be first tried, as they do not constipate the bowels as does morphine. But, when the pain is severe and agonizing, morphine in small doses, always hypodermically, should not be withheld. The resulting constipation must be promptly overcome. As a rule, the pleurisy pain subsides after a day or two and the morphine may be stopped.

It may not be orthodox for a regular, but I always give bryonia in some form, an active tincture or bryonin, hourly, to every patient I am called to treat. It not only sedates the pain, local and general, but, I believe, promotes absorption of pleural exudates. Furthermore, bryonia acts upon the bowels and thus counteracts the constipating effect of opiates. In fact, care must be exercised, for bryonia, given too long and in too large doses, may set up catharsis that will overdeplete and weaken the patient.

Management of the Fever

There is a difference of opinion today in regard to the fever in pneumonia. Some writers contend that the fever runs a short course and is beneficial rather than harmful. Elsner, one of the latest to profess this belief, writes as follows:

"The fever is one of nature's provisions to destroy the pneumococcus—and is an expression of the virulence of the toxemia." And, further, he says: "The pneumococcus can not long thrive in the temperature of 104° F." A little later, in the same paragraph, he says: "Fever persistenly above 104° to 106° F. demands attention both in children and in adults."

I should say that it does! But the sole and only measure Elsner recommends to combat the high temperature above 104 degrees is hydrotherapy. Good, so far as it goes.

Just as long as such inconsistent "rot" is put up to the profession and swallowed at $25.00 per set, just so long will pneumonia be a self-limited or a grave-limited disease; and did the public know what we preach

they would save themselves the expense of our vigilance at the bedside.

Now, if the pneumococcus "can not long thrive in a temperature of 104° F." and most pneumonics run a temperature of 104 degrees, then, why should we ever have a temperature of 105 and 106 degrees? And, if it is high temperature that cures pneumonia, then, why should we get panicky over a temperature of 106 degrees and begin hydrotherapy? It would look as though 106° F. ought to cremate the last pneumococcus and allow the victim to proceed in peace.

Again, he says: "The temperature is an index of the 'virulence of the toxemia.'" Very well, so it is. But what sane reason for going after a fever above 104° F. while doing nothing when it is under 104?

Another View of Fevers

There are others who take a different view of the fever. Dr. J. M. French says: "Fever is a source of danger in itself—and is an indication of the severity of the infection, and if it can be kept at a reasonable point, the danger is greatly lessened." While he had reference to typhoid fever in particular, he holds this for all fevers, and teaches it is rational to try to abort or modify all fevers by some means. And today we find others, like Butler, Shaller, and Candler, whose writings are full of this same teaching.

This brings up the question of aborting pneumonia before the stage of consolidation and modifying the symptoms in the later stages, thus aiding nature in an early resolution. De Wolfe, in *The Medical Council*, says sodium salicylate, if given within twenty-four hours after the chill, sometimes will abort the attack. And I knew a physician who gave his pneumonia cases little treatment other than sodium salicylate, claiming they run a milder and shorter course. And, why not, since it is antipyretic and both an intestinal and systemic antiseptic?

In this connection, I wish to mention briefly that, while I was a hospital interne, we had a patient who developed pneumonia after an operation. The nurses worked faithfully to keep the fever down by bathing. Finally I was told the temperature was 106° F. and bathing would not reduce it. The assistant surgeon, Doctor Hull, was sent to aid me, who said he knew a remedy that would sweat him and reduce his fever. He said he got it from a notorious Chicago quack, whose name he would not mention. He ordered 20 drops of pure oil of gaultheria in capsules, to be repeated in two hours, and the dose reduced or omitted as the fever declined. That evening and night the fever fell under profuse sweating, and recovery was prompt. Nor could I see that there was any undue depression.

The patient received a little strychnine during the crisis. It was the fifth day and it possibly would have occurred anyway. But, *do we know* that it would? And with a temperature of 106° F., unaffected by hydrotherapy, would watchful waiting have been justified? And is it justified with even a lower temperature?

I digress to say that I have often resorted to pure oil of gaultheria to reduce high fever from various causes and never saw it do harm, having given it to small infants with hyperpyrexia from bowel toxemia.

The Abortion of Pneumonia

Over ten years ago I heard a discussion of pneumonia by one of my professors before a medical society. Then a physician of the city threw a challenge into that society, that, with aconite, digitalis, and veratrum, he had for years aborted pneumonia if seen early, and modified the disease, inducing an early resolution when developed. I heard something that night that I never heard in my medical course. But the poor fellow stood all alone, just as Harvey and others have had to do. One after another, those professors and eminent medical lights in the city got up and paid their respects to him. Yet, I have been giving aconite and veratrum in fevers and pneumonia more or less ever since.

And, really, was it anything so very new I heard, or that we hear today from the camp of the active-principle therapeutists?

Years ago that great clinician and therapeutist, Bartholow, wrote of aconite thus: "It lessens the pulse rate, lowers arterial tension, diminishes abnormal heat; it, therefore, antagonizes that condition of the organism known as fever."

Later he says: "The author's observations entitled him to speak with confidence of the good effects of this remedy in fibrinous pneumonia. It is more especially serviceable before exudations have taken place, but is not without utility at any stage, provided the inflammatory process continues. It not only abates the symptoms, but it favors the removal of products of inflammation, by increasing elimination through the skin and kidneys. The use of aconite is not incompatible with other measures which may be needed; but, generally, in fibrinous pneu-

monia, aconite is sufficient up to the period of crisis."

But there are those who say these depressants of the circulation cause heart failure in the crisis. Used judiciously and properly guarded, I don't believe it. You must decide at the beginning whether the case is sthenic or asthenic. If the latter, digitalis and strychnine in small tonic doses should be combined with aconite. If sthenic, then veratrum may be combined with aconite and digitalis for a short time. Doctor Shaller says that he gives small tonic doses of digitalin and strychnine from the beginning in every case; and says that after hepatization sets in aconite should not be given without these tonics; and sweating is an indication to stop aconite or reduce the dose, other remedies being needed.

Doctor Bridges says: "I still regard pneumonia as a self-limited disease (he believed that when I was in school), but believe there are abortive cases terminating before the stage of consolidation occurs. I am not certain that any treatment can accomplish this. There is no way of proving that a case would not have stopped short of consolidation even if the remedies relied upon had been withheld. The argument against the abortive threatment is, that any treatment so considered would fail probably in more than 75 percent of cases."

If, as Bridges concedes, there are abortive cases, then it is worth while to try to abort or shorten the course of others. Whenever a case aborts or is spontaneously cut short, for some reason the equilibrium of the circulation is established, the pulse slows down and the fever falls. And, as said before, there are those who claim to be able to aid nature to do this; and it will hardly do to say that all the men from Bartholow down to the present galaxy of men who positively make these claims are incompetent and dishonest diagnosticians and clinicians.

Personally, I believe that in my own limited practice I have aborted cases that would have been lobar pneumonia of the classical type, and have modified the course of others by an early crisis—a thing always desirable. But I can not prove it; yet, neither can anyone else disprove my assertion. And, if we fail to do either, what harm have we done? We have equalized the circulation, slowed the pulse and lowered the tension; for which the patient is grateful. And, by stimulating the vagus inhibitory center, thus relaxing the vasomotors, we have called a halt upon an overworking heart. It is overwork that causes cardiac dilatation and heart failure.

The Fever, and Cardiac Exhaustion

You all know that as the temperature rises the pulse and the respiration mount with the fever in its upward course, and a vicious circle is established that does not tend to correct itself. As before pointed out, the temperature being an index of the degree of infection and toxemia, is it common sense to allow the heart to fly like a shuttle and whip it up, as the fashion is, with strychnine, digitalis, and whisky and in that manner overwork it to the degree of exhaustion, dilitation, and death; also by inducing rapid circulation, generalizing the toxemia, which in turn, acting on the heat-centers, increases the fever, and so more quickly overpowers the patient? The more hot toxemic blood is pumped around the system, the higher the fever goes. Apply a law of mechanics. You can't heat a building by means of hot water unless you circulate the water, and the more it circulates, the hotter the building will become.

Locally, a little toxic material enters the blood, paralyzes the inhibitors, accelerates the pulse, the temperature rises, and, so, the vicious circle is established. It is my opinion that uncontrolled high fever is a considerable cause of the heart failure, because you always find a rapid, overworked heart with high fever.

Equalizing the two Circulations and Relieving the Head

Doctor Fennell, in *The Journal of the American Medical Association*, points out the fact that there are two circulations to be considered in pneumonia, and it is the right heart that fails; in which condition the pressure in the systemic circulation may be greatly decreased, so that the radial pulse is almost imperceptible, while coincidently the pressure in the pulmonary system is so markedly increased that it causes dilatation of the right ventricle. In this condition, the patient will be cyanotic. And then Fennell says: "Would it be wise to increase the systemic blood pressure by giving digitalis and strychnine? Better give nothing." He advises to equalize the pressure of the two systems by "placing the patient in the semi-recumbent position and flushing the capillaries with glonoin and atropine, assisted by a mustard hot-pack; thus giving the heart the only chance to reassert itself."

In this connection, I wish to call attention to sparteine sulphate as a heart tonic in

pneumonia. Over a year ago Dr. George E. Pettey, of Memphis, Tennessee, in two masterly articles in CLINICAL MEDICINE, gave us the therapy of sparteine. He points out that it must be used in 1 1-2- to 2-grain doses, by mouth or hypodermically, every two to six hours, instead of in 1-10- to 1-4-grain doses, as the textbooks advise. He shows by sphygmographic tracings that sparteine combines the therapeutic virtues of digitalis and veratrum without their objections of high pressure and nausea.

He cites a case of pneumonia, with right-heart failure, where digitalis, strychnine, and whisky had been administered without effect, while death was imminent. Sparteine sulphate in 2-grain doses was then given every two hours hypodermically, followed by prompt relief and eventual recovery. In a personal letter, Doctor Pettey tells me that he has been using sparteine for thirteen years and finds it so superior to digitalis that he depends entirely upon the former.

Since reading these articles by Pettey, I have given sparteine in several cases where I was dissatisfied with the usual tonics, and I find that it slows the pulse without raising the pressure, giving a full compressible pulse. Let me report this case briefly.

A woman about 40 years old, asthenic, suffered from grip for three or four days, for which she took home treatment. Grip is a first-rate precursor for weak heart in pneumonia. Then one morning she was taken with a severe chill, pleurisy, and cough. A few hours later, she had a pulse of 120 and a temperature of 103.6° F. and fine rales were heard in the lower left lobe. I applied adhesive strips and hot applications, gave her a laxative, and also granules containing aconitine, digitalin and strychnine, one to be taken every hour. I also prescribed a mixture of gelsemium and bryonia, to be taken a teaspoonful every hour. I received a message the next morning, saying that she was much better; nevertheless I went out to see.

I found the pleurisy virtually gone, while the temperature early in the morning had receded to normal; but at this time she had a slight chill. I believe that this pseudo crisis was a near-abortion of the disease. She had sweat during the falling of the fever and as she improved, the family retired (there was no nurse). This occurrence may account for the second light chill she experienced, incident to the room getting cool, as usual, early in the morning and insufficient covering after the high fever and sweating.

Had this been an extension of the pneumonia process, I should have expected a recurrence and extension of the pleurisy; but there was neither, and I should not have expected an early complete crisis at the end of the fourth day from the initial chill.

On this, the second day, at the time of my visit, the patient's temperature was rising, then being 100°, and it reached 104° F. that day. There was now a rusty streaking of the sputum and beginning consolidation. The treatment of the first day was continued, but I added creosotal, 7 1-2 grains, and nuclein, 4 drops every three hours; the latter with the idea of increasing leukocytosis. I also ordered more laxative and the sulphocarbolates, and advised plenty of salt in liquid diet; for, in high fevers—pneumonia especially—the chlorides are rapidly eliminated from the system.

The microscope revealed the presence of streptococci and pneumococci in the sputum. The third morning, the temperature was at 104° F., respirations were 40 and over; the pulse, 130, and higher upon exertion or coughing. At this point, as I was convinced that she had a severe infection, I decided to give strepto-pneumo bacterin. Elsner recommends very highly the bacterin or serum in conjunction with injections of quinine and urea hydrochloride. And I thought that, if the bacterin did not favorably influence the pneumonia, it might at least be prophylactic against empyema—of which I have no ordinary dread.

Bacterins Used and Sparteine Added

I gave 75 million of the cocci, one-half of the smallest dose in the package. Soon she complained of dizziness, and her pulse was more rapid. I did not think a hypodermic of digitalin indicated, as the tension already was high. Consequently I gave 1 1-2-grains of sparteine sulphate hypodermically instead. Within a half hour the pulse came down to 120 and was more ull and compressible, and she spoke of feeling better. I ordered 2 grains more in two hours to be taken by mouth, and repeated every two to six hours thereafter, according to the rapidity of the pulse.

The pulse lowered and the fever declined that night, under sweating, and it reached normal the following morning—twenty hours after giving the serum and beginning the sparteine sulphate. And there was complete crisis and prompt resolution. The pulse was 84 at my visit, but the temperature was subnormal and the patient was sweating.

She had been delirious one night during the fever, but was perfectly rational during the crisis.

I do not know that it was necessary to stop the sparteine at this point, because of the free diuresis, leaking skin and lowered pressure, with the pulse only 84 and fairly good. Still, from my experience with sparteine, I decided to give strychnine and digitalin with atropine hypodermically, instead. At the same time I ordered the patient dried of sweat, and kept so; also dry heat to the feet. I neglected to say that when the sparteine was begun the beforementioned granule was stopped. There never was any more fever, but the pulse rose again to 120 and sometimes more. There also was high blood pressure, which I could not account for.

The following day I returned to sparteine in the place of the digitalin, resulting in a lowering of the pulse and of blood pressure. But the next morning, although in good condition otherwise, the patient was delirious again. As she had become perfectly rational, on the morning of the "crisis," under the full physiological action of sparteine, after her previous fever-delirium, I could not assume the sparteine to be the cause of this phenomenon. But, as another physician had told me that he had seen it cause delirium, I again stopped the sparteine and instead gave a little digitalis tincture and strychnine. Again the pulse reached 120 by the following day and, while the tension was increased, the pulse was not materially lowered by the digitalis. The delirium, rapid pulse and high tension were maintained for over two weeks.

May Sparteine Cause Delirium?

I addressed a letter to Doctor Pettey, asking him whether he ever had observed delirium to be caused by sparteine. In his reply he says: "I have used sparteine almost constantly for thirteen years and I have never seen it to cause delirium yet. I do not see how it can have such an effect. The cases in which it has occurred would doubtless have been delirious without it. Of course, delirium in pneumonia is quite common when there is high fever, but, as sparteine does not increase blood pressure, I cannot see how it would cause it even in pneumonia."

Later, I got the history that my patient had been in virtually this same delirious state once before, induced by worry and loss of sleep for ten days while she was caring for a typhoid-fever patient, and that she was treated in a sanitarium for three or four weeks for it. Which lends support to Doctor Pettey's belief that the delirium was merely coincident.

Now, I cannot say whether the crisis would have occurred on the fourth day, in this case, or not, or whether it may be ascribed to the treatment. I do not feel that enough bacterin was given to influence the disease materially. I believe the lowering of the pulse and equalization of the blood pressure were factors in the early crisis.

Empyema and Pleurotomy

Doctor Bridges cautions his readers "to look out for empyema in any case that does not resolve by the eighth day." And he makes a point of especial interest to the general practitioner, well worth noting, in regard to simple pleurotomy. He advises to make a 2-inch incision in the 8th interspace on the left and in the 7th on the right down to the pleura in the postaxiliary line These land-marks are different from those given in most books and, as readily seen, afford free drainage and avoid uphill drainage.

To Promote Expectoration.

In every case of pneumonia, I think, the more material there is expectorated, the better. To assist in this, I give, in all cases, calcidin, combined with emetine or ammonium salts. If the cough tends to stop, sanguinarine nitrate helps to stimulate it.

In conclusion, I maintain that, in the treatment of pneumonia, it is rational to control the pulse and the fever by means of drugs in conjunction with hydrotherapy. I have seen a heart in a mad race beating 120 to 150 per minute, and keeping this up without cessation for three long weeks, finally ending in cardiac dilatation and death, when digitalis, strychnine and whiskey were administered for support, where I believed that aconite or veratrum, combined with the digitalin, to counteract the tension caused by the latter and slow the heart as well, were indicated. Others, however, believed the combination was dangerously depressing. That was the best I knew then, and, with all due deference for the honest opinions of others, I think I was right.

At present, however, I consider sparteine sulphate, in 2-grain doses, the superior drug for slowing the pulse, equalizing the pressure, and saving the heart; and not alone in pneumonia, but in other febrile conditions. It is innocuous, and not cumulative like digitalin, for the reason that it causes free diuresis

and, therefore, assure elimination of the toxins.

I honestly believe that the practice of giving a combination of digitalin, strychnine, and whisky, as it is being used all over the country, without anything to control the high pressure, is a vicious one, in many cases; and that it has "railroaded" many a patient into the Beyond, in our desperate efforts to save him by these measures of last resort, not in pneumonia alone, but no less in surgical shock and other depressed conditions.

Pneumonia is probably the chief cause of death throughout the temperate zone and, therefore, worthy of our best consideration. We may hope that in the near future we shall be able to approach a pneumonia-patient with a specific serum with as much confidence as that with which we now administer diphtheria antitoxin. Until then, however, and even then, there will remain an important place for the rational use of drugs.

My plea is for a re-study of the rational active treatment of pneumonia, as opposed to the expectant treatment.

An Experimental Study of Emetine Hydrochloride*

By M. E. Maurel, M. D., Paris, France

EDITORIAL NOTE.—There is such intense interest in emetine at the present time that it is hardly necessary to make an apology for the publication of this translation of Doctor Maurel's article. The problem of the pharmacologic action of emetine in the control of hemorrhage is a puzzling one. That it does check bleeding, and apparently more quickly and surely than other remedies, the evidence available seems to prove. But why? Perhaps Maurel has answered the question. You are the jury—we leave the decision to you. Next month we shall present the record of some animal experiments with this drug.

IN FOREIGN countries, during the last eighteen months, and during the last year in France, emetine hydrochloride has been the object of numerous clinical studies.

After Vedder had observed the amebicidal properties of emetine, and Leonard Rogers had applied it to the treatment of dysentery and amebic hepatitis, Chauffard was the first one in France to use it in the same diseases, he in turn being followed by a large number of other physicians, all of whom confirmed the claims made for it. Thus we find that emetime is a specific for both affections caused by the Entamœba histolytica. This is a new field added to those applications which emetine already was known to possess; and the discovery is, indeed, one of real practical importance, particularly so for tropical countries. But Flandin[1] deserves the credit of having employed emetine in hemoptysis; Renon[2], in hematemesis. Since then other uses have been made of this drug; in fact, Ramond[3] used it in the treatment of acute and chronic bronchitis.

During the last year I have counted about thirty papers on the treatment of dysentery, amebic hepatitis, and hemorrhage (and this without at all attempting to discover the total number of articles written), so that these works have seemed to me to renew the interest in experiments made with emetine about fifteen years ago, and published during the years 1900, 1901, and 1902. It is these latter experimental studies that I wish to recall and present a résumé of them; and this effort appears to me desirable, inasmuch as others who have employed emetine in the treatment of hemorrhage seem to be in doubt as to its mode of action.

I believe that my experience will explain particularly the manner in which emetine acts as a hemostyptic. This, therefore, is one of the points which will make my comments of interest; still, aside from that, the study of emetine has enabled me, as will be seen, to enlarge the question and to approach the more general subject of the mode of action of therapeutic and toxic agents.

My researches regarding emetine are, to my mind, so intimately related to my ideas regarding the general action of therapeutic and toxic agents, largely in conformity with the laws of Claude Bernard, that it is difficult for me to speak about emetine without speaking about these laws at the same time. In fact, this work was undertaken by me to confirm these laws. As it was, my labors eventuated in the most convincing demonstration of those laws, so that the confirmation of Bernard's laws obtained by these experiments

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actually has more interest for me than have the clinical applications of emetine, important as I realize these to be.

It is for these reasons that I wish to recall these laws in reviewing my own experience with emetine, and also to add some therapeutic considerations.

Claude Bernard, after having experimented only with curare, sulphocyanide of potassium, and strychnine upon rabbits, frogs, crawfishes, and leeches, arrived at these three conclusions:

1. Toxic and medicinal substances exert their action, not upon organs, but upon tissues.

2. Each of these substances has an elective anatomic element.

3. This elective action is true for the different animal series.

It will become plain later on that this was one of the greatest intuitions of the genius of this man. Unfortunately, this illustrious physiologist (probably occupied with other researches) did not return to the discussion of these ideas, so that not only do they remain incomplete, but they have been almost entirely forgotten.

The medical profession at that time was not prepared to understand such a conception of therapy; and, in order to make these laws understood by the medical profession, and accepted by them, it would have been necessary to study them one by one in connection with clinical facts. Claude Bernard had no time to do this; still, he knew enough to suggest and formulate these great principles, which, it seems to me, should dominate a large part of the teachings of pathology and therapy; Bernard left to his successors only the task of interpreting them, perfecting them if need be, and proving their importance.

Laborde[4] and G. Pouchet[5] already have made very successful efforts in this direction and for fifteen years I myself have tried to join my efforts with theirs.

The Author's Studies of Bernard's Laws

In 1899, in an endeavor to determine the effect of drugs upon leukocytes, I undertook a line of research in regard to the exact mode of action of different agents on various anatomic elements[6], and, knowing of the laws formulated by Claude Bernard, I first took up the study of these three laws.

To this end, I chose a therapeutic agent which I understood well, having often used it clinically; namely, ipecac, and I endeavored to find out whether Bernard's laws would be confirmed when applied to this drug. But, inasmuch as I had to experiment upon animals and administer the drug by hypodermic injection in order to insure absorption, I turned to its most active principle, the alkaloid emetine; moreover, emetine being only slightly soluble in cold water, I chose one of its most soluble salts the hydrochloride.

It was in this way that the experiments which I am about to relate were conducted.

The emetine hydrochloride being chosen to verify the laws of Bernard, I employed in these experiments eels, frogs, pigeons, and rabbits, these to represent fishes, batrachians, birds, and mammals, respectively.

I began by determining the M. L. D. (minimum lethal dose) per kilogram bodyweight for each of these animals[7]; then, using systematically first the doses below and then those above the M. L. D., I watched the effect of these doses upon a certain number of anatomic elements, namely, the leukocytes, the erythrocytes, sensory nerves, motor nerves, smooth muscle-fiber, and cardiac fiber. Administering doses smaller than the M. L. D. (that is, the doses to be considered as therapeutic ones), the anatomic elements showed a reaction to the drug in the following order: (1) Smooth (involuntary) muscle-fibers; (2) sensory nerves; (3) motor nerves; (4) striated (voluntary) muscle-fibers; (5) cardiac fibers; (6) leukocytes; (7) erythrocytes.[8]

It was found that the smooth fibers were stimulated; the functioning of the sensory nerves, motor nerves, and striated fibers was diminished; that of the cardiac fibers was rather increased. As to the leukocytes and erythrocytes, the therapeutic doses seemed to be without effect.

Bernard's Laws Confirmed with Emetine

Thus, the assertions of Bernard were confirmed, at least along broad lines; for, the experiments demonstrated that

1. Emetine acts upon anatomic elements.

2. Its action is elective with reference to the smooth fibers, which it contracts.

3. This elective action is a fact at least for the vertebrates.

It is true that this selective influence is not exclusive, as Bernard seemed to believe. *Emetine acts, not only upon smooth muscle-fibers, but also, in larger doses, upon other anatomic elements.* But, if for the expression "exclusive selective action" we substitute "the order of sensitiveness," the laws of Bernard remain true.

Administering now doses higher than the M. L. D. (that is, toxic doses), I found another fact not covered by Bernard's laws; namely,

that the order in which these anatomic elements lose their functions is not the same as that in which they are acted upon by a therapeutic dose. Emetine produces an order of toxicity different from the order of sensitiveness mentioned above. The anatomic elements examined after administration of a toxic dose lost their functions in the following order: (1) Sensory nerves; (2) motor nerves; (3) striated fibers; (4) cardiac fibers; (5) smooth fibers; (6) leukocytes; (7) erythrocytes.

The motor nerves and the striated fibers were affected very soon after the sensory nerves, while the cardiac fibers were affected much later.

In the eel, the frog, and even in the pigeon and the rabbit, giving doses a little above the M. L. D., the heart still was seen to beat from ten to twenty minutes after all the reflexes were abolished and the striated muscles had been completely and definitely relaxed.

And again this order remains the same for all animals observed.

Under the influence of the toxic dose, the sensory nerves are the first ones to lose their function, while the smooth fibers, which are the first to react to a therapeutic dose, do not lose their function before doses have been given which have already checked the function of the cardiac fibers.

This means a supplementation of the laws of Bernard, but it does not change the general meaning of them, because there are other agents, such as heat, cold, lead, and the like, which produce an order of sensitiveness different from that following toxic action.

As can be seen, the experiments with emetine confirmed, in their essentials, as nearly as could be hoped, the three laws of Bernard; to wit:

1. Emetine acts upon anatomic elements.

2. Emetine exerts a selective therapeutic as well as toxic action upon these elements.

3. The orders of reaction are the same, at least as regards the vertebrates.

This was for me a great satisfaction, and so much the more, because the importance of confirming these laws at that time, as well as today, exceeded by far the importance of the physiologic study of ipecac and its alkaloid.

Of course, I also was glad to have been able to prove experimentally, to my own eyes, with emetine, the different properties which ipecac was known to possess clinically. I had thereby penetrated the intimate mode of action of this latter drug; and had seen it, owing to its emetine, stop hemorrhages, and control congestion, inflammation, and other like processes. But all this referred to only one therapeutic agent, while a confirmation of Bernard's laws necessarily would have to embrace them all.

However, I did not let matters rest there; but following the same methods, I studied, from the same standpoint, ergotin (Bonjean), bichloride of mercury, acetate of lead, digitalin, strophanthin, and several other drugs, and always with similar results. So it was that since the year 1900[9] I have been able to confirm the correctness of the laws of Bernard; I could even sum them up in one single law; to wit:

Bernard's Three Laws Consolidated Into One

For each therapeutic or toxic agent, the anatomic elements acted upon fall into a certain order—that is, the elements are affected successively in a definite order—as to sensitiveness and poisoning, this remaining the same for all vertebrates.

Researches in this direction conducted since that time with some twenty therapeutic or toxic agents, as also subsequent clinical observations, only have served to confirm my convictions on these two points.

Experiments Prove for Emetine What Clinicians Claim for Ipecac

These long-continued investigations, made to determine the order of sensitiveness and toxication, have enabled me to recognize experimentally that emetine possesses practically all the properties which the clinician has already known in ipecac, although with a few modifications.

We know that ipecac is an emetic, and that given in fractional doses it is almost sure to prove purgative. It is equally effective in hemorrhages. In my hands as well as in those of numerous other physicians, it has stood its test as a decongestant and, to a certain extent, as an antiphlogistic, and it has proven, although in a less marked way, defervescent; moreover, in one case, where general anesthetics were lacking, it was very useful in diminishing sensibility, in reducing hernia; it has also proven of great value as a muscle relaxor in luxations and fractures. Finally, ipecac is contraindicated in pregnancy, since it may act as an abortive.

My experiments with emetine hydrochloride not only have shown that this alkaloid possesses most of the properties enumerated, but, moreover, they have enabled me to understand its intimate mechanism so well that, when I have found differences in the action

of ipecac and that of its chief alkaloid (emetine), my experiments have always explained them.

Just How Ipecac and Emetine Act

All the properties of emetine so closely related to those of ipecac explain themselves, as we shall see, by their order of sensitiveness and toxication.

The selective element of the therapeutic dose is, as I have stated, the smooth (involuntary) muscle-fiber, which the emetine contracts.

Thus, in my experiments, I have observed every time after an injection of emetine that the vessels, after a short vasodilation, contracted strongly, and that this vasoconstriction lasted a long time, to such an extent that the small vessels became almost impermeable. Is this not the most striking demonstration of the hemostatic property, long known to be possessed by ipecac, and recently shown for emetine?

Emetine stops hemorrhages by contracting the smooth fibers in the vessels. There can be no other explanation. It is also by its action on the smooth fibers that emetine, as well as ipecac, contracts the dilated vessels in congestion and inflammation.

I have been able to confirm this action under the microscope, and I have repeated this experiment several times, because I find it so striking.[10] Under the influence of emetine, one sees the dilated vessels contract, and the circulation, which had ceased, begins again in a few minutes.

I think, therefore, that emetine can be depended upon in congestions and inflammations of every kind in which ipecac already has been employed successfully. I wish to add that I have used ipecac successfully during more than thirty years in dysentery,* enteritis, gastritis, congestion of the liver, biliousness, bronchitis (simple and capillary), bronchopneumonia, pneumonia, pulmonary emphysema, and so on. In all these diseases, I am convinced that emetine renders the same service as ipecac, with the added advantage that its emetic property is far less pronounced than that of the latter.

Does not this contracting effect upon the entire vascular system explain the decrease of temperature under its influence? Is it not thus that the chilling which precedes vomiting should be understood?

*Although the principal action of emetine in amebic dysentery is due to its amebicidal action, I think that in this disease it acts also in an effectual way as a decongestant and antiphlogistic; at least, this is the case in bacillary dysentery, which is beneficially influenced by ipecac, in spite of the fact that this drug does not seem to act upon the Shiga bacillus.

But it is also because of its action on the smooth fibers, that I believe, *emetine should be avoided in pregnancy.* I fear, that like large doses of ipecac, it provokes uterine contractions, particularly in the pregnant uterus.

Thus, emetine by its action upon the smooth fibers, when given in therapeutic doses, is hemostatic, decongestant, antiphlogistic, and slightly defervescent; besides, perhaps, abortifacient.

But, furthermore, the experiments with toxic doses have shown, as I have said, that, under their influence it is the sensory nerves which become the selective anatomic element, and that the reaction on the motor nerves and striated fibers follows very closely that of the sensory nerves. These three elements lose their functions almost at the same time.

Some of the Properties of Emetine Analyzed

In 1901[11] I made the statement that emetine injections produce local anesthesia. Does not this selective influence of the toxic dose explain quite naturally this anesthetic action? Is it not owing to this same action upon the sensory nerves that ipecac is expected to diminish sensibility and thereby facilitate the reduction of a hernia?

Finally, knowing that the striated fibers lose their function, as a result of the same dose which acts upon the sensory nerves, can we not in this way explain the muscular relaxation which we expect ipecac to produce in facilitating the correction of luxations and fractures?

The action of toxic doses of emetine upon the sensory nerves, the motor nerves, and the striated fibers explains its anesthetic property and its power to produce muscular relaxation.

For the reason here named, I am convinced that the clinician can expect the same results from emetine as from ipecac.

Concerning the emetic and purgative actions, it seems to me difficult to identify the physiologic effect of ipecac with that of emetine. Owing to its action upon the smooth fibers, the emetine constituent surely plays a role in producing vomiting; but, as it acts only slightly on the striated fiber (a concurrent condition indispensable for the act of vomiting), it is probable that ipecac contains a substance which acts particularly upon the striated fiber; and it must be this substance operating in conjunction with emetine that makes ipecac such an energetic emetic.

The same is true for the purgative action of ipecac. Emetine, of necessity, must also

in this case interfere by its action on the smooth fibers of the intestine; but ipecac must, moreover, contain a substance with a special action on the secretive organs and the digestive apparatus.

[Doctor Maurel makes no reference to cephæline, the most powerful emetic alkaloid of ipecac. A study of this substance, along the lines suggested in this paper, would be interesting.—ED.]

As seen from these experiments (published in 1900 to 1902), the properties of emetine, as employed therapeutically, appear already to be numerous and important.

Vedder and, later, Rogers (Calcutta) have of late added another not less important one; namely, its action upon the Entamœba histolytica.

This is a fact of the greatest importance; first, because of its unfailing action, and, secondly, because of the increase in frequency of ameboid dysentery and abscess of the liver in our colonies. But, important as this may be, it is evident that this specific action refers only to affections caused by amebas; albeit, through its action in other diseases, emetine will be of value in daily practice[12].

A Summing-Up

In summing up the results of my experiments with emetine hydrochloride, I arrive at the following conclusions:

1. The experiments have proven that this alkaloid, given in therapeutic doses, has the same hemostatic, decongestant, antiphlogistic, defervescent and perhaps abortifacient actions as physicians have known ipecac to possess.

2. It has also been shown that by increasing the dose of emetine the sensibility is diminished and muscular relaxation produced.

3. The experiments have also proven that the emetic and purgative action of ipecac are partly attributable to emetine, but that therapeutic doses of emetine probably are not sufficient for both of these effects.

4. It is an important fact that my experiments have shown that all these properties of emetine explain themselves fully by its action on anatomic elements, principally those upon which it has a selective influence.

5. Finally—and this is the point which in my opinion deserves the most attention—my experiments have completely confirmed the laws of Claude Bernard, which, it appears, should henceforth guide all research concerning the action of therapeutic and toxic agents.

In closing, I wish to repeat these laws:

1. The therapeutic and toxic agents act, not on organs, but on anatomic elements.

2. Each agent has a selective influence upon one of these anatomic elements.

3. This selective action is always the same, at least in the order of vertebrates.

I should greatly appreciate it if the remarks of mine regarding the laws of Claude Bernard would encourage some of the research-workers to take them as a guide.

I am firmly convinced that they alone bring us to a true understanding of the intimate mode of action of the therapeutic and toxic agents. Thus, I assume that it is more interesting to know the mode of action of the older remedies than it is to discover new ones, without knowing their mode of action. Such discoveries lead us into empiricism. May my plea be heard!

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Diseases of the Alimentary Canal

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EDITORIAL NOTE.—This is the fourth paper in Doctor Benedict's series dealing with the diseases of the alimentary canal. We are sure that every reader of "Clinical Medicine" will be pleased to learn that this series will be continued for several months. Gastric disorders are always troublesome—difficult to diagnose correctly; not easy to treat successfully. In order that every reader may apply in the best way possible the principles laid down in these articles, we invite everyone to "fire in" the questions he wants answered.

IV. Achylia Gastrica

IN THIS condition, no gastric juice, in the digestive sense, is secreted at all. Not only is free hydrochloric acid entirely lacking, but combined hydrochloric acid as well. The peptone test is negative, milk is not coagulated; upon mixing equal parts of gastric filtrate and 60 per cent decinormal hydrochloric acid to make a solution of 30 per cent decinormal, of full physiologic strength, coagulated egg-albumen is not digested. As a rule, in spite of the apparent tendency toward fermentation, the total acidity is low, that is, 3 to 10 per cent decinormal, instead of 50 to 75 per cent, the normal proportion.

Here may be mentioned a peculiar reaction, observed in every case since its first discovery, and which will explain why nothing has been said thus far about the alizarin reaction for measuring combined hydrochloric acid. Upon adding alizarin to the filtrate, the end reaction occurs immediately. As commonly stated, alizarin determines the end point of fermentation acids, beyond the free hydrochloric acid acidity, which is measured by dimethyl-amidoazobenzol. Generally, the alizarin end point occurs a few degrees beyond the straw-yellow end point seen with dimethyl. Everything beyond the alizarin end point, and up to the end point for total acidity shown by phenolphthalein, is supposed to be combined hydrochloric acid. If this were so, the entire acidity in achylia would consist of hydrochloric acid in organic combination; which is an obvious absurdity. For this reason, the writer believes that it is best to discard alizarin altogether or to experiment with it simply as a matter of amusement.

A transient and manifestly functional achylia may occur in asthma, nervous shock, surgical shock, acute fevers. chilling of the body, and so on. Chronic achylia, both of the gastric and of other digestive glands, as indicated in the feces, by an almost complete failure of digestion, occurs in Addison's disease, late in cancer (especially of the stomach, though not universally), in conditions of atrophy of the mucosa of the stomach constituting the ultimate stage of chronic gastritis.

It is also occasionally encountered accidentally in series of students volunteering for digestive experiments and in persons with some temporary digestive condition leading to examination. Such persons generally maintain good health; the achylia does not disappear, but the patient does, so that it is practically impossible to collect observations to decide the question as to whether this form of achylia is functional or attributable to some organic lesion.

Sometimes it is found after hemorrhage from gastric ulcer has ceased; sometimes such cases become cancerous later, or, perhaps it would be better to say, that they may have been already in the undiagnosticable stage of gastric cancer. It may, further, be found in cases of obstinate diarrhea; whether it persists after the diarrhea has been relieved, as by attending to a chronic colitis, or touching up a rectal or sigmoid ulcer through the speculum, is difficult to determine, for the reason that such patients feel a natural repugnance to further experimentation.

Secretory Perversions—Hyperchlorhydria

As a matter of convenience, the subject indicated in the subhead has been left to the last, for the reason that we have one general indication to guide us in bringing the secretions, and especially that of hydrochloric acid, to the normal level. Since hyperchlorhydria implies the paradox of too good digestion, except for some interference with the ptyalin digestion of cooked starch—but which is not absolute, while, moreover, not being very important, because of the pancreatic provision—digestants of all kind are contra-indicated.

In the practical therapeutic sense, or even in that of the laboratory, we hardly can speak of an excess of pepsin and rennet, whether these represent two or a single ferment. From the functional standpoint, hyperchlorhydria always is curable; still, many cases are

persistent and recurrent and suggest an actual organic hypertrophy of certain glandular parts.

Up to a few years ago we could be still more definite and refer to the oxyntic, or parietal cells of the gastric tubules. Recently, some doubt has been cast upon the differentiation into oxyntic and chief cells. There is current an apprehension that the hyperchlorhydric stomach will corrode or, rather, digest itself, thus giving rise to an ulcer. As a matter of fact, gastric ulcer is pretty evenly distributed among hyperchlorhydric hypochlorhydric or achlorhydric and euchlorhydric cases.

Critical consideration of the evidence shows that many of the early statistics on which our conceptions have been based depend upon the diagnosis of excess of acid as shown by qualitative tests or even by tests for total or other degree of acidity not specifically hydrochloric. On the other hand, many physicians, like the writer, feel that, however desirable it may be to know the state of secretion in ulcer, the passage of the tube during the acute stage is too dangerous to be considered.

While hyperchlorhydria is a troublesome and even a serious condition, the writer does not remember ever having had a case that subsequently developed into either gastric or duodenal ulcer. Thus, our treatment need not be materially influenced by the fear of an impending ulcer and hemorrhage, but we may treat the condition on its own account.

We can make bricks without straw, but not without clay or shale. The stomach cannot elaborate hydrochloric acid without some chloride, and the only chloride present in the system in amounts to be considered in this connection is the chloride of sodium. Thus, theoretically, hyperchlorhydria may be cured in the immediate sense although not with reference to the tendency, to recurrence, merely by establishing a salt-free diet. Practically, such a diet should be made part of the treatment, but alone it is unsatisfactory, because it is difficult to do more than eliminate free salt from the diet, and, if the patient is eating at hotels, restaurants, and boarding houses, or even at a home where intelligence and appreciation of his needs are lacking, we cannot even eliminate the salt used in cooking. Even if we construct a diet from which meat is lacking or which contains only thoroughly washed meat (virtually soup-meat), and which includes only foods having a negligible amount of salt, yet, the system may retain a considerable amount and utilize the chlorine over and over again. Consequently, we not only must exclude salt from the diet as nearly completely as possible, but must discourage hydrochloric acid secretion and neutralize any excess.

As has been scientifically demonstrated by Pawlow (but well understood as a matter of logic and clinical and even physiologic experience long before his time), a diet which does not require a given digestive secretion tends to working its cessation. Hence, the food should contain a minimum of proteid and as much fat, starch, and sugar as possible. It should be distinctly understood that such a diet acts gradually; any sudden and unwise attempt to counteract hyperchlorhydria by an excess of oil dressings, candy, or the like, may precipitate an attack. Condiments, tasty foods, tasty methods of cooking (such as frying) should also be avoided. Vinegar or any other acid food adjuvant obviously supplements the acidity. Even buttermilk often has an acidity of 100 percent decinormal.

Inasmuch as the immediate secretion of an excess of hydrochloric acid is largely reflex, all forms of anxiety, vexation, and other strong emotions should be avoided. For example, there may be cited an attack, in a physician, brought on by the fear of further trouble while riding in the rain over a state road paved secundum artem with flint chips, after one previous blowout.

Almost any drug acting as a local anesthetic, whether so classified or as a mydriatic, may be employed to diminish excessive acid secernment; but most patients entertain an objection to cocaine and opiates, on account of the danger of habit formation, and to mydriatics, because of the interference with the use of the eyes and danger of ocular disease. Anesthesin, orthoform, and cannabis indica remain, then, as the best drugs to discourage such excess of secretion. Bismuth subcarbonate is slightly antacid, but more valuable to soothe and protect the mucosa; while other of its salts, as the subgallate, may be resorted to. Pure mineral oil (purpetrol) with camphor dissolved in it, and, if desired, with the bismuth salt incorporated, will be found useful.

For practical purposes, we have only three direct gastric antacids: magnesium oxide or hydroxide, calcium hydroxide or carbonate, and sodium bicarbonate. The first (and it makes little difference whether the magnesium oxide or milk of magnesia is given) has the advantage of being "still," that is, yielding no carbon dioxide, and of favoring elimination, including that of sodium chloride. However, its laxative action may be too great.

In that case, we naturally turn to lime; only, unfortunately, the hydrate is but slightly soluble (although its solubility is increased by means of saccharine solutions—saccharate of lime). Chalk may be used, although this, like sodium bicarbonate, produces effervescence. This effervescence undoubtedly titillates the stomach into secreting more acid; yet, the writer is becoming more and more skeptic about the practical harm of this action, while in cases in which magnesium compounds produce too great catharsis or in those in which the actual amount of acid is great, sodium bicarbonate must be used. We may get an idea of the dose by administering a teaspoonful of it in saturated solution and listening to the effervescence, repeating the dose as often as effervescence continues to occur. Rarely will more than three teaspoonfuls, or about 15 Grams, be needed.

The prognosis of hyperchlorhydria is almost absolutely favorable so far as immediate results are concerned. The writer has had a case of twenty years' duration considered by the patient as cured in a week—but it is exceedingly improbable that the result was permanent.

On the other hand, the patient may insist that he takes no salt, that none is used in cooking his food, he may be taking full doses of local calmatives and large doses of magnesia, and, yet, yield for weeks highly acid stomach contents—the hydrochloric acid being far in excess of what one can account for chemically and physiologically. Even these cases are bound to succumb to treatment if persisted in.

For all that, the writer is convinced that, barring transient cases, hyperchlorhydria consists in some definite hyperplasia of acid-secreting cells, analogous to the condition in certain forms of exophthalmic goiter (with which it may, indeed, be associated) or else in some underlying nervous condition, functional so far as the secreting glands are concerned, but probably really organic from the standpoint of the innervating apparatus. Hence, hyperchlorhydria is liable to recur, and, while it may be gradually overcome, is likely to last, as a tendency, with intermittent attacks, for years.

Euchlorhydria, in the writer's experience, implies proper formation of the ferment or ferments of the stomach, and, hence, literally, good digestion; except as the latter may be influenced by extrinsic fermentation or by motor abnormalities, either functional or owing to organic obstruction, and the like.

But, the examination of the stomach contents is only one phase of gastric diagnosis. There may be euchlorhydria and, indeed, perfect digestion, in certain stages of very serious organic lesions, such as ulcer, gastritis, cancer, and so on. Also, as already intimated, a patient may complain greatly about his stomach, while yielding normal stomach contents, and still be far from malingering or a neurotic, for he may be suffering from chronic appendicitis, gallstones, movable kidney, chronic colitis, abdominal adhesions or one of various other maladies.

Deficient Acid Secretion

In hypochlorhydria, achlorhydria, and achylia, the indications are, in general, the reverse of those in hyperchlorhydria; the prognosis varying, in a general way, according to the degree of depression of acidity—though, of course, a transient achylia from some form of medical shock, as previously considered, vouchsafes a better prognosis than a persistent hypochlorhydria. In hyperchlorhydria, it obviously is foolish to administer digestants unless, perhaps, some specific or inclusive digestant, to favor starch conversion before the acidity reaches a degree sufficient to inhibit the ptyalin. In deficiency of secretion, it is illogical to administer digestants, except when no hydrochloric acid and, therefore, no mature ferment is present. But, in effect, there are some cases in which the mere administration of hydrochloric acid to activate the ferment or ferments, seems to require some assistance from pepsin, or one of the vegetable multidigestants like papain.

This is a purely empiric opinion, entirely unjustified academically. Such use of pepsin, papain, and the like, is mainly required in cases complicated with marked fermentation and not relieved by attempts to secure aseptic or, rather, asaprophytic ingesta.

It is scarcely necessary to state that the main immediate treatment of hypo- and of achlorhydria is to supply the lacking hydrochloric acid. There are some practical points (which depend upon sound theory) to be remembered. Prescribe the acid when it is physiologically needed; that is, about an hour after eating, letting the stomach exert its own secretory powers first. Give it sufficiently diluted not to cause corrosion or astringency—approximately corresponding to the acidity of good strong lemonade. Order the mouth rinsed after the dose.

The dosage should depend as nearly as possible upon the actual deficit. For instance, the normal strength of gastric juice is 2:1000; of stomach contents, 1:1000. Let

us assume the bulk of an actual meal as 500 Cc., that there is achlorhydria, and that the official dilute hydrochloric acid used is of the proper strength (1:10). We need, therefore, 1-2 gram of the gaseous hydrochloric acid, or 5 Cc. of the official dilute acid. This amount, given at once, would require so much water as to dilute the stomach contents too much. Therefore it is better to give 1 Cc. at a time, every fifteen minutes or so, beginning about three quarters of an hour after the meal. If the titration has shown a hydrochloric acidity of, say, 10 percent decinormal, we may assume that half the above amount of hydrochloric acid is needed, and so on.

As in hyperchlorhydria the indication was, to abate the secretion and to soothe the stomach, so in the group of cases with deficient hydrochloric acid we need to stimulate. Without reducing the carbohydrates unduly or even the fats below a moderate amount, we need proteids, especially meat proteids, salt, condiments, sharp-tasting foods, those with small hard particles, such as nuts and the like. The food should usually be taken hot, not too much diluted with beverages; and (even at the risk of offending orthodox dietetic ideas) it should be, within bounds of reason, what the patient likes. Salt, of course, is indicated as a source of hydrochloric acid, but it should be remembered that it is often actually lacking in the system and that one cannot cure hypochlorhydria by administering salt, any more than one can cure anemia by giving iron. Moreover, an excess of salt in the stomach tends to inhibit hydrochloric acid secretion.

Special attention should be paid to the treatment of achylia. At the outset, it is well enough to administer hydrochloric acid or acidol, pepsin or papain, and so on, with the hope of developing secretion. Such treatment is like giving nutrient enemata, with the idea of doing the best one can and hoping rather than expecting that good will come of it. In achylia resulting in the ultimate stage of gastritis, in cancer or in connection with marked intestinal complications, it is better, as a rule, to prescribe predigested food, rather than to administer digestants; still, each case must be treated according to individual indications and results.

In the large group of achylia cases in which the subjects are enjoying good general health, it probably is best, after a reasonable attempt to restore gastric function, to let the stomach alone and consider it as merely an antechamber to intestinal digestion.

As to drugs supposed to favor gastric secretion, the writer, while having no special objection to condurango, quassia, aromatics, and so on, or to galenicals of nux vomica, is content with strychnine alone, although with no absolute sense of its reliability.

Veratrine: The Alkaloid of Sabadilla

Its Action and Applications

By H. Hamilton Redfield, A. B., M. D., Chicago, Illinois

VERATRINE, according to the U. S. Pharmacopeia, is an alkaloid derived from veratrum sabadilla (cevadilla), a bulbous plant belonging to the natural order of liliaceæ, and indigenous to Mexico and Central America. However, in addition to veratrine, this same plant contains the alkaloids cevadilline, sabadine, sabadinine, and a basic substance known as Wright's veratrine.

In its physiologic action, veratrine closely simulates that of aconitine, being, in maximum doses, an exceedingly powerful depressor of the cardiac apparatus as well as a spinal paralyzer. Its influence upon the respiration is not nearly so marked as is that of aconitine, and it also differs from the latter in being an emetocathartic, paralyzing all the motor system centrally, and impairing all reflexes, while leaving sensation unimpaired. It exerts little, if any, action as a diuretic or diaphoretic, so far as any direct stimulation of these excretions is concerned, but by relaxing the vessels it opens wide the doors of elimination and so provides for its own escape and for that of all other hemic toxins.

While in large or excessive doses veratrine is productive of marked depression, yet, its use is not fraught with any great degree of danger inasmuch as it seldom proves fatal, because of its producing free purging and vomiting before the excessive depression can become manifest. When death does result from veratrine, it is from paralysis of the heart.

Given in small doses, veratrine produces a diminution in the force of the heart, but it does not at first exert any appreciable effect upon the rate of the pulse. Small doses relax the tension of the arterioles, thus relieving the heart of part of its work. By this, the circulation is facilitated and the nutrition of the heart-muscle and of other tissues is enhanced. Its continued administration in full doses, however, has the effect of causing a decrease in the rate of the pulse, which becomes soft, compressible, and shows a marked tendency to rise upon the slightest effort or exertion on the part of the subject. Muscular weakness becomes marked; also nausea and vomiting occur.

Taken in large doses, the foregoing symptoms are all increased; the pulse becomes exceedingly rapid and is so weak as to be hardly appreciable to the finger; the skin becomes cold and clammy; debility is extreme; vomiting is constant; the patient becomes dizzy; there is impairment of vision; and partial unconsciousness results.

While it has been found that aconitine and veratrine closely resemble each other in their action in a general way, yet, it should not be taken for granted that the one can replace the other or that veratrine can be placed in the same category with aconitine as a febrifuge. While veratrine exerts a powerful influence upon the heart, the same as does aconitine, still, it lacks in power as an equalizer of the circulation—a quality possessed to a marked degree by aconitine—which latter, by its influence over the vasomotor system, becomes the antipyretic above all others.

The most suitable sphere of action of veratrine, in the acute inflammatory conditions, seems to be as an arterial and cardiac sedative, in which role it justifies itself and gives excellent results.

Therapeutics of Veratrine

From the foregoing, it would follow *a priori* that veratrine would be the indicated remedy whenever the pulse is full, strong, and bounding, showing great arterial tension, excitement or congestion, these symptoms being sometimes coupled with nausea, vomiting, and profuse perspiration.

It should not be forgotten in aneurism, when its depressing action on the circulation is desired.

In cerebral congestions, when the patient complains of a bursting sensation in the head, the cause of these congestions often being traceable to heat, alcohol, vascular irritation or a condition of plethora, veratrine is of the greatest service.

In the initiatory stages of cerebrospinal fever, when the onset is sudden, the congestion intense, pulse hard, full and bounding, with nausea and vomiting, veratrine should be the remedy of choice.

Fordyce Barker gives veratrine the first place in puerperal fever due to metritis.

It is most effective in the congestive stages of pneumonia, when the pulse indications are the ones so typical of the use of veratrine: hard, full and bounding, with respiration rapid, and the patient is bathed in a copious perspiration.

It should be studied in all acute congestions of the lungs, which are sometimes met with in acute bronchitis and asthma. In these cases, the fever is high, dyspnea extreme, and the pulse is the typical veratrine-pulse.

Diseases of the heart, such as endocarditis and pericarditis, when the arterial tension is high, are benefited by veratrine.

Distress in the cardiac region, with an increased heart action and a full-tension pulse, call for veratrine.

In peritonitis, metritis, ovaritis, with a high-tension pulse, and the temperature running high; also in the convulsions of the puerperal state, when the face is flushed and the blood-vessels of the head and neck are extremely congested, it is the remedy of choice.

In nephritis, hepatitis, cystitis, pleurisy, and tonsillitis, when the arterial tension is high and the congestion marked, veratrine should be studied, as it will give results that are all that can be desired.

It is a very serviceable remedy in cases of exophthalmic goiter, when the action of the heart is strong and the arterial system under great tension, as is usual in the early stages.

The action of veratrine as a reducer of arterial tension makes its indications exceedingly patent, and it should be prescribed in all cases where there is a condition of excitement or congestion of the heart, with a full, strong pulse.

Given in association with aconitine and digitalin, it makes a combination unexcelled in the treatment of the acute inflammatory conditions, when the pulse-indications for veratrine are present. These conditions are seen at the onset of the sthenic fevers, and here the administration of aconitine (gr. 1-128), digitalin (gr. 1-64), and veratrine (gr. 1-128), will bring about an alteration in the condition quicker and more pleasantly than any other combination that can possibly be devised.

In the asthenic fevers, when the opposite pulse-condition exists—for instance, when the pulse is quite soft, slow and compressible—the exclusion of veratrine from the above combination, and its replacement with strychnine arsenate, will prove equally effective to meet the conditions.

In that dread condition, eclampsia, the *bete noir* of all obstetricians, veratrine has been productive of the best results, and many lives have been saved by its use. It is best given hypodermatically, and it should be repeated at short intervals. In these cases, veratrine is best given as follows: Dissolve six granules in a fluidram of water, and inject. Repeat the dose in fifteen minutes; and continue to full physiological effect.

The more veratrine is studied, the more it will be appreciated; and, once its power over the circulation is realized and understood, it becomes a sheet-anchor to the physician in meeting the conditions so often found in the onset of the acute inflammatory conditions.

Specific Indications

Pulse full and strong, deep-red stripe down the center of the tongue, tissue full, not shrunken, flushed skin, marked arterial throbbing, increased arterial tension, eyes bloodshot, sthenic fevers.

The Bacterin Treatment of Respiratory Catarrh

By Malcolm Dean Miller, M. D., Wollaston, Mass.

IN the issue of this magazine for May, 1914, I published an article dealing with my experiences with bacterins in various infections. Among the letters which I have received from people who read this paper there were two that particularly pleased me.

One of these missives was from a physician living about a hundred miles away. He wrote that he had long been interested in bacterin treatment, but had not cared to undertake any work with bacterins because of the lack of clinical evidence, and particularly because what few clinical papers he had encountered were by men in distant parts of the country. He asked whether I would consent to see him and tell him in greater detail about the cases I had treated. This, naturally, I was extremely glad to do. So, he came and spent a day with me and listened to all I could tell him. Not long afterward, I was surprised to receive from him a bank draft for a substantial sum, which he insisted that I accept as a recompense for his taking up my time.

The second letter was from a layman who, through some library, had got a copy of Clinical Medicine. This gentleman asked whether I had had any experience with the bacterin treatment of chronic nasal catarrh or could indicate whether it would be of benefit in that trouble. As at that moment I myself was undergoing a series of injections and also had a friend under treatment, I replied that I believed it would prove of great benefit, judging from results already obtained in the two instances, and promised to let him know definitely later.

My Old Chum's Experience

The question of applying bacterins to nasal catarrh was one which first suggested itself to me in March, 1913, when I was visiting in a distant city and came across one of my old chums of the medical school. He and I used to spend all our spare time in the fascinating work of making photomicrographs and I can remember vividly the severe throat infection which he contracted and which at first was thought to be diphtheria. Cultural tests, however, proved the infection to have been acquired from a pure culture of Friedlaender's pneumobacillus, and after several weeks' illness he recovered, apparently completely.

However, the bacilli were not extirpated, and when, after about ten years' separation, I again met my old friend, he presented a pitiful sight. One acute catarrh after another had worn him down; the antrum and the frontal sinuses had become infected, and when I saw him he was having the delirious joy of having a trocar jammed in every few days, to allow drainage, and then having the cavity irrigated and filled with a 50 per cent argyrol solution. Hearing that I was in town, he dragged himself out of bed and came to look me up. He was looking forward with the utmost dread to the next sitting with the nose-man.

Looking back over my friend's history, I told him I believed that the old Friedlaender infection was chiefly responsible and urged him to get a Friedlaender stock bacterin and try it. Together we went to the largest drugstore, which boasted a good line of surgical instruments and other physicians' supplies, and, found a complete line of bacterins in stock. An injection fortunately was given at once; and on the following day when I was leaving my friend declared that he already felt better and had less discharge. The results of subsequent injections were so satisfactory that he threw up his position and went to Boston to devote himself to completing the cure. I must here mention that he did not complete his medical course, but went into business, in which he is earning about twenty times as much as the average doctor. He had some radiographs made of his skull; also, had cultures made, which showed the Friedlaender, streptococci, and staphylococci, and was using an autogenous bacterin intramuscularly when I saw him. He promised to let me know the end-result, but never has reported. However, he had derived very great benefit from the stock Friedlaender—in fact, it seemed to start improvement after the local work had failed to do anything except to cause postoperative depression.

Stock Bacterins Better than Autogenous

Authorities to the contrary notwithstanding, I have never seen such good effects from autogenous as from stock bacterins. I consider an autogenous proper only when a suitable stock is not marketed or cannot be extemporized from stocks on hand, or when the infecting organism is thought to be of a peculiar strain, as was the case in the great septic-sore-throat epidemics in the East some years ago.

I have used autogenous bacterins without perceptible effect, and then, having exhausted the supply, have substituted stocks containing the same organisms and secured at once marked effect, with relief of symptoms and cessation of the pus formation, For these reasons, I began to look around for a suitable stock bacterin.

Examinations of many specimens of nasal discharge convinced me that the ordinary pus cocci, pneumococci, streptococci, and Friedlaender's bacillus are generally found in most cases, though one or more may be missing or absent in the individual case.

There is, however, one good point about bacterins; it seems to do absolutely. no harm to inject immense doses of any germ which does not happen to be taking part actively in a given infection. Shotgun mixtures, then, in bacterins not only are permissible but desirable. The laboratory can make up a mixed bacterin to contain all the germs which are commonly found in a certain type of disease, and it is safer and better to have a few kinds that may not be present in a certain patient than to be short one kind.

After some reading of makers' lists, I selected a bacterin which could be bought in bulk packages and which contained B. Friedlaender, 300 million; M. catarrhalis, 200 million; pneumococcus (or diplococcus lanceolatus), 80 million; streptococcus, 60 million; staphylococcus, albus and aureus, each 200 million to each cubic centimeter. Subsequently, on account of greater convenience of supply, I have been using 20 Cc. bulk goods of the following composition: staphylococcus, albus and aureus, and diphtheroid (B. septus), each 100 million; Friedlaender, pneumococcus, M. catarrhalis, and streptococcus, each 50 million per Cc.

My Personal Experience

Appointing my patient to perform the delicate operation of injecting me, I began the treatment with about 0.5 Cc., and increased the dose slightly at each sitting until we were taking upward of 1.5 Cc., at intervals of about ten days. Now, any brother physician who has been afflicted with acute, subacute, and chronic catarrh during the whole of his remembered existence, to say nothing of such slight disorders incident thereto—including adenoids, deflected septum, enlarged turbinates, and spurs (all more or less operated upon except the adenoids, which at this writing are "still with us")—can judge of the delight which dawned upon me when after about 5 injections I noticed a great diminution in the amount of discharge. Instead of keeping a separate handkerchief for receiving nasal discharge at least twenty or thirty times a day in the periods between acute coryzas, I found that I was going sometimes two days without blowing my nose at all! I pushed the dose up to 1.7 Cc., at which point both I and my patient felt a decided chilliness a few hours after the injection, with greatly increased secretion.

After that, we both went on observing for ten days, at the end of which time I developed the most "lovely" and "beautiful" cold I can remember ever having had. I let this go one day, then took an increased dose of my bacterins—about 1.9 Cc.—and the next morning

every symptom had vanished absolutely. At this stage, too, I advised my patient to go under observation. After two weeks, he, too, had a pronounced negative phase, which terminated, as in my own person, by an injection. When he reached 2 Cc., with only a very slight local reaction, I discontinued the injections.

Ups and Downs in My Patient's Case

The duration of immunity, in my patient's case, was only two months, during which time he indulged in all sorts of tests to prove his immunity to exposure, which formerly had infallibly brought on an acute rhinitis. He then came in with an increase of nasal discharge from one nostril, tenderness over the antrum, and symptoms of an oncoming "cold." Examination showed a mucus discharge containing a few pus-cells and pneumococci.

At this time I obtained a point of history which had not previously been elucidated, namely, that there had been a severe and protracted infection of that antrum years ago. I advised his seeing a specialist, but he refused; so, we obtained a straight pneumobacterin and made six injections of that. He then had practically no discharge and no symptoms.

Six months have elapsed and he has had no acute colds—the first summer he can remember to have been so blessed. The mucous membranes throughout the nasal tract are of a healthy color, free from crusts and excessive secretion, vascular congestion, and so on. His general health is correspondingly improved. The singing-voice in this patient has been greatly benefited and the speaking-voice has lost that characteristic catarrhal, woodeny quality.

My own condition was equally improved. The immunity lasted until December—over seven months. I had no acute colds during the entire summer. Only five days ago, a patient came in with an extremely severe cold and evidently I have picked up the infection from him, my immunity having expired. However, I took a dose of about 0.7 Cc. of the second-named bacterin and aborted the cold successfully, and this has been the story with about a dozen acute cases I have treated during the past summer and fall.

One single injection of 0.5 Cc., or a little more, invariably checks all the acute symptoms within twelve to eighteen hours, and a second is seldom required. In the first acute case in which I tried it, the injection was given on a Monday afternoon, the cold having started on Friday; the husband of the patient called me Monday noon, as his wife was too sick to hold her head up. She received the bacterin at about 1 o'clock, p. m., and that evening at 8 she called me on the telephone to say that her cold was all gone.

Experience with Other Patients

Having done the experimenting on myself, I undertook last spring to treat chronic nasal catarrh on the basis of a regularly increased dose every five to seven days. I have now discharged well, that is, entirely free from abnormal discharge and the usual symptoms of chronic catarrh, 7 patients. I carried the dose up to 2 Cc., and repeated this dose until it no longer caused any perceptible local reaction. It generally takes from 7 to 12 injections, increasing by about 0.25 Cc., at each sitting, in order to secure this end-result.

One gentleman, 60 years of age, with adenoids and deflected septum, who had suffered every summer with what he called "hay-fever," was cured by 7 injections. After 5 injections, he called me up to say that he now was sleeping all night for the first time in forty years. Before beginning the treatment, he would have to get up and cough out the accumulated droppings which collected until a feeling of suffocation wakened him. His last report, two months after receiving the last dose, was that he still is entirely free from catarrhal symptoms. This man, of course, needs operative treatment, and, I hope, will soon be able to follow my advice and see a specialist; but, at any rate, he has no dropping in the throat, the membranes are in a healthy condition, and he has good breathing-space, compared with the condition existing before treatment.

One of the most instructive things about this particular case was, that only 7 injections were required, the dose having been regularly increased by 0.25 Cc., each time, disregarding somewhat severe local reactions and a marked chill following the fourth and fifth injections. This corresponded to what I observed in my own case; namely, that no great improvement seemed to take place after the first few injections, but as soon as large doses, over 1.25 Cc., were attained, there appeared signs of constitutional reaction and a general negative phase of slight degree, which gave way to a rapid disappearance of symptoms as soon as the next (and larger) dose was administered.

Reviewing the cases discharged and those now under treatment, I should say most emphatically that local and constitutional reactions are not a contraindication to increasing

the dose, allowing a seven-day interval, although it might be advisable to repeat the same dose if five-day intervals were being adopted. I have tried five, seven, and ten days between injections, and believe that, from all points of view, the seven-day interval is most suitable. It may be advisable, in the case of nervous women and timid men, to avoid any marked constitutional reaction, but purely upon grounds of expediency; as already stated, another dose generally carries them into a very strongly marked positive phase.

Consequently, unless special reasons for repeating the same-sized dose are present, adopt the plan of increasing regularly by about 0.25 Cc., at each successive dose, push the dosage up to at least double the usually advised amount, that is, to 2 Cc., and *repeat this dose until it no longer causes any local reaction.*

Tell the patient that there will be no marked change until four or five doses have been given; that there will then be an apparent aggravation of all the symptoms; that there may even be a profuse discharge from the throat and bronchi, although previously they had not given recent evidence of infection; that subsequently improvement will be rapid, provided he *follows your directions* regarding medicines and local treatment *to the letter.* Failure to attain positive results, so far as my experience has gone, may confidently be ascribed to the failure of the patient to carry out faithfully the home treatment.

In all work with bacterins, it is necessary to insure a free circulation of blood through the infected tissues, in order to carry the antibodies to the place where they are to act in combining with the living organisms and preparing them for leukocytosis. When progress does not follow as rapidly as you expected, inquiry almost invariably will bring out the admission that the treatment has been neglected or else hastily and ineffectively executed.

It is necessary—and you must impress forcibly on the patient that it really is essential—to use a hot alkaline douche and gargle, to induce congestion of the mucosa. Once a day is enough, if the application is thorough. One doucheful (1 ounce) to each nostril and the rest of a glassful for gargling is the minimum useful amount. It is well to use three or four douchefuls, but, better still, not to fail to use the one. An oil spray to follow generally is advisable. After a patient once has been pulled up roundly for neglecting the local treatment and he thereafter has tried faithfully to carry it out, he will himself notice so great an improvement that he hardly will neglect it again.

Abnormalities requiring surgical correction should be cared for, as a rule, during the treatment, although the advice of a competent specialist should be heeded if he pronounces against operation.

Autotoxemia a Factor

The physical examination of a patient seldom reveals anything of interest outside of the upper respiratory tract until the urinary examination is made. Chronic-catarrh victims invariably are autotoxemic. The total urinary acidity to phenolphthalein ordinarily is about 50 degrees. Indican generally is present in appreciable amounts. The history shows well-marked chronic intestinal fermentation.

The first thing to do, naturally, is to "clean out, clean up, and keep clean." Calomel, podophyllin and bilein compound, the intestinal antiseptic tablets, sodoxylin, and galactenzyme cover most of the indications. From the start, emphatically, give nuclein. I employ either the 5-minim tablets, giving 20 minims a day for at least a week, or, if a patient seems to need bracing, the nucleinated phosphates, the triple arsenates with nuclein, or some other tonic with nuclein added. Since the presence of bacteria throws a strain on the blood-forming organs, it is well to activate them to the fullest extent by giving nuclein. All my patients who have received nuclein have seemed to do better than those who did not get it, chiefly in requiring fewer injections and showing no constitutional reaction of marked degree toward the end.

The urinary acidity should be estimated each week. It goes without saying that, owing to the rapid destruction of leukocytes, which perish in their work of phagocytosis, a great deal of uric acid is set free in the system. Sodoxylin in small doses, say, a heaping teaspoonful at night or night and morning, will prevent accumulation and ease the strain upon the kidneys. The skin, of course, is kept active by means of suitable baths—in fact, elimination is looked after in every possible way, if results of the best nature are desired. The patient should be treated as a whole.

Neglect of anything that can assist nature in removing waste products is sure to delay the cure. Although it is *possible* to establish an immunity by means of the bacterin alone, it is foolish to disregard things that assist its action.

Only those who have suffered from oft-repeated colds and from chronic catarrh for many years and then at last have passed months entirely free from those symptoms, can realize the difference. I still have a band of adenoids, which I shall have removed some day when I can take time; but, barring the recent infection—already relegated to the past by the single injection taken the other day—I have had the most comfortable seven months that I can remember. Even though the immunity is not permanent, I intend to reimmunize myself whenever necessary. An occasional hypodermic injection is a small price to pay for freedom from the nasty symptoms of catarrh.

The Doctor's Horse

By Nelson S. Mayo, D. V. S., Chicago, Illinois
Secretary of the American Veterinary Medical Association

As to Age and Sex of a Horse

IN SELECTING a horse, the question of age is important. because, other things being equal, the more years of usefulness, the more valuable is the animal; nevertheless, too much stress must not be placed upon age alone. Some horses will give more years of better service at 12 years of age than other animals will at 6 years. If a horse is well preserved, active, and suitable, two or three years in age should not be considered a serious objection.

Telling the Age

The age of horses is determined very largely by their teeth. Horses, like humans, have temporary and permanent teeth. A colt sheds its two central incisors (nippers) at 2 1-2 years of age, while the permanent incisors are "up in wear" at 3 years. The lateral incisors are shed at 3 1-2, and the permanent are up in wear at 4 years; while the corner incisors are shed at 4 1-2 years, and the permanent corner incisors are in wear at 5 years. The first 3 molars on each jaw are shed about the same time as the temporary incisors. At the age of 5 years a horse is said to have a "full mouth," meaning that all the temporary teeth have been shed and the permanent teeth are up in wear. At this age a colt becomes a horse and a filly becomes a mare.

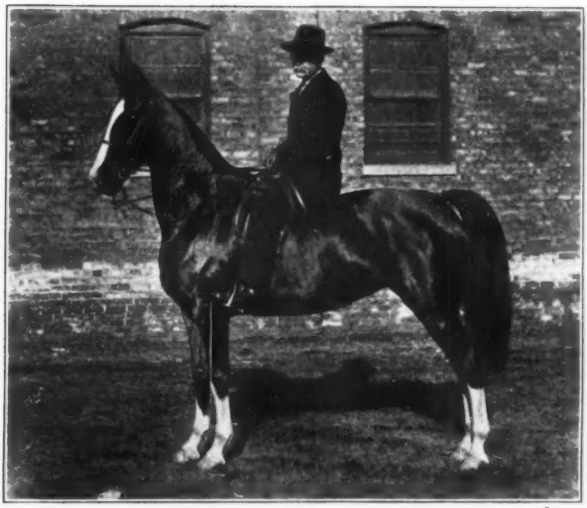
Colts under 5 years of age do not, as a rule, stand hard work well. They cannot masticate their food as well as a horse can, and they are growing and developing; and for this reason it is seldom advisable to purchase a colt unless one can favor and develop it. A mare or a horse 6 or 7 years old is mature and able to stand hard work with much less risk of permanent injury; it now is a "seasoned" horse.

The permanent teeth of young horses are very long, extending three to four inches into the maxillary bones, and give to the animal's face a full, rounded appearance. As the horse grows older, the teeth wear off on the table surface and at the same time grow out of the jawbones, until in old horses they are mere snags that frequently can be picked out of jaws with the fingers.

The incisor teeth of young horses have what commonly are called "date-cavities," which extend from the table surface into the body of the tooth. These cavities are black, surrounded by a narrow ring of white enamel, and are wide from side to side of the tooth. As the tooth wears off, these date-cavities disappear in the following order: At 6 years, from the lower central incisors; at 7, from the lower lateral incisors; and at 8 years, from the lower corner incisors. At 9 years of age, the date-cavities disappear from the central upper incisors; at 10, from the upper laterals; and between 10 and 12 years, from the corner incisors. The cavities do not wear out of the upper incisors with the regularity that they do from the lower ones. At 12 years, the date-cavities have disappeared from all the incisors and the horse is said to have a "smooth mouth."

"Bishoping" Teeth

Unscrupulous horse-dealers sometimes make artificial date-cavities in horses' teeth, a process that commonly is called "bishoping." This deception is easily recognized by one familiar with the normal date-cavity, as the narrow ring of enamel is wanting, while the general shape of the tooth varies with the age of the horse. In young animals, the incisors are wide from side to side, narrow from front to back, and form approximately a right angle with the jaw. As the horse



A Fine Type of Saddle-Horse

grows older, these teeth become narrower from side to side, wider from front to back, and form a triangular table surface. At the same time the incisor teeth form an obtuse angle with the jaw, giving the characteristic "chisel shape" seen in aged horses.

Look at the Head

In addition to the age as indicated by the teeth, the general appearance of the horse's head also is important. The full, round appearance of the face and jaws disappear, the depression above the eyes becomes marked, and in aged horses white hairs frequently appear about the eyes and temples. While the general signs for determining the age are few, close observation and a study of the teeth of horses of known age are necessary to fix the age.

The length of service that a good horse will give in a country practice depends upon so many factors that it is hard to give an estimate. One of the most satisfactory carriage-horses ever owned by the writer had been driven by a physician for 13 years over the hills of New England. The writer drove this mare 2 years and then sold her to a friend who had known the animal all this time. The mare then was 21 years old but was as active and efficient as most horses are at 12 years of age.

Gelding or Mare?

The question as to whether a mare or a gelding is preferable is a debatable one. Some mares during the period of estrum are objectionable. Geldings frequently are particular about voiding urine on the road and may retain it, giving rise to spasm of the bladder and colic. This latter condition usually is relieved by placing the horse on litter where the urine will not spatter when it is voided. A warm, soapy enema also is useful.

The Principles of Cosmetic Surgery

By Ralph St. J. Perry, M. D., Minneapolis, Minnesota

EDITORIAL NOTE.—This is the second paper in what we believe every reader will find a series as interesting as it is unusual. Doctor Perry is tilling a field with which few of us are familiar.

IN COSMETIC surgery, the results obtained will be a constant advertisement to the public of the surgeon doing the work, and they will be for or against the operator as they are good or bad. In abdominal and most other surgery mistakes and poor results are hidden by the clothing or the sod, or disclosed only at the "organ recitals" held in connection with the sewing society or ladies' aid; but the work of the cosmetician is palpable and paraded before the world where it speaks for itself. This being true, it is up to the operator to use every means and effort to secure the most satisfactory result possible.

The Instruments and Materials Needed

The instruments used in cosmetic work vary little from those used in other branches of surgery except in size and purpose, many of them being adapted from the eye and nose specialists. The knives are straight, full-curved, half-curved, and angular, blunt-pointed and sharp-pointed, sharpened on the convex, the concave, on one edge, on both edges, and on the tip; but they must be sharp, so that only clean, smooth incisions are made. Scissors are of various sizes and shapes, and, like the knives, must be sharp. The needles used must be the smallest size capable of doing the work, Hagedorn pattern preferred, for there should be the minutest possible scars from sutures. Because of the small-sized needles generally used, needle-threaders are useful adjuncts. Needle holders should be of a size adapted to the needles used and of a style which can be quickly operated and which will not break the needles. The surgeon should have a small holder, such as Boynton's, for working around the inner canthus, behind the ear, in the nostril and other places where the relations are close.

Suture materials as a rule are of the non-absorbent and non-absorbable kinds, such as silk, linen, silkgut, horse-hair, and wire. Experience has demonstrated that catgut is not dependable in cosmetic work because of its weakening and stretching through absorption, thereby lessening the tension, and because of the opportunity for wound infection which it invites when exposed in an open wound that is handled more or less daily. All *buried* sutures, which are not to be removed, are, of course, of catgut. Suture sizes correspond with needle sizes, and should be the smallest possible.

Dressings for wounds should be absorbent, aseptic and antiseptic; gauze, cotton, wool, adhesive plasters, bandages, eduction sponge, retention netting, and so on, are all to be used as indicated. Antiseptic powders are in constant use, and of the many varieties now at the command of the profession those found most useful in my own practice are thymol iodide for general use, bismuth formic iodide for syphilitic cases, and europhen and orthoform in painful wounds. By a thorough preliminary cleansing and sterilization of the field of operation the necessity for the lavish use of antiseptic powders can be done away with, especially if proper antiseptic dressings be applied to the parts.

Styptics in cosmetic surgery should be conspicuous by their absence, for the local use of any blood-clotting chemical fills the tissues with a coagulum which acts as a foreign body, delays or prevents union, and invites infection. Ligatures should be used when neces ary, pressure and torsion whenever possible, and the various hemostatic drugs, hypodermatic serums, and so on, whenever indicated from the history of the patient.

Methods of Sterilization

The methods of sterilization of instruments, dressings and field of operation are those commonly employed by all successful workers in surgery. Gloves and edgeless instruments are boiled or steamed; cutting instruments are sterilized first in alcohol and then dropped into a 1 : 1000 solution of mercuric cyanide. Sutures are steamed or dry sterilized as the material may require or will stand. Dressings are dry sterilized for wounds where healing is desired by first intention and may be steamed for cases where healing by granulation is desired or expected. It is a good idea to subject dusting powders to dry heat, not exceeding 100° C., for experience has led us to suspect that some pathogenic or pyo-

genic germs may live in a *dry* antiseptic powder. A temperature of 100 C. will not disorganize the iodine powders in general use.

In sterilizing the hands, my present vogue is to—

1. Wash them with coconut soap.
2. Scrub well with antiseptic soap.
3. Rub with tincture iodine.
4. Remove iodine with alcohol.
5. Rinse in 1 : 1000 mercuric-cyanide s lution.

This latter solution is kept handy in a bowl for frequently washing the hands during the course of an operation, also for washing off instruments soiled only with the patient's own blood, saliva, mucus or perspiration. The field of the operation is put through the same cleansing process as the hands where the nature of the tissues does not countermand; otherwise, special measures suitable to the nature of the tissues are used.

As a part of the armamentarium there will be needed an outfit of syringes and needles for securing paraffin prosthesis electrical equipment for electrolysis, static, high-frequency, galvanic cautery, x-ray, and the several other methods of electrotherapy. Carbon-dioxide snow is very much in favor just at present and can be used advantageously in some cases. Various chemicals of a caustic nature are useful, details regarding the use of which will be given later on.

Forms of Anesthesia Found Useful

In all cosmetic procedures where pain will intrude as an element precautions must be taken to prevent such intrusion, as pain causes wincing or other movements by the patient which are most apt to interfere with the execution of some bit of delicate work and so mar the final effect. Where absolute quiet is essential a general anesthetic should be used, either chloroform or ether, the arms and legs made fast to the table and the head held firmly in the desired position. In other cases satisfactory work may be done under local anesthesia with the use of restraining straps as needed.

For some three or four years past I have used a solution containing 1 percent of quinine and urea hydrochloride and 2 percent of cocaine or novocain, with 5 drops of the 1 : 1000 solution of supracapsuline added to each two drams of the anesthetic solution. Mix this solution fresh as needed for each operation. This formula gives an immediate anesthesia, controls the hemorrhage and also gives a prolonged anesthesia lasting from twelve to forty-eight hours.

After an operation has been completed, it frequently becomes necessary to protect the parts operated upon from meddling by the patient or pernicious friends, from involuntary interference with dressings during the sleep and from other disturbances, and these precautions are as necessary with adults as with children. Bandages may be used to cover the field of operation and plaster of paris dressings may exclude and protect. Rigid oversleeves (Fig. 1) of metal or pasteboard will keep the hands away from the face in the cases of children; but with adults, their own common sense and strength of purpose should aid in helping the surgeon.

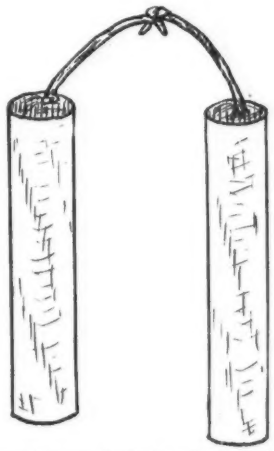


FIG 1. Oversleeves; made of tin or pasteboard of a size suitable to the patient and fastened over the arms by means of tapes tied behind the neck. Being rigid, they prevent flexion of the elbow; the patient cannot touch the face or neck, yet can move the arms freely.

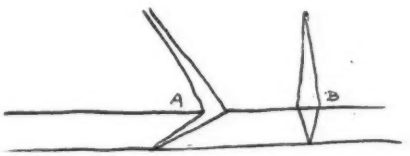


FIG. 2 A shows incision made at an angle to the plane of the skin surface. This incision permits accurate approximation and causes less scar formation than does the vertical incision shown at B.

Surgical procedures in cosmetic work are either open, subcutaneous or submucous.

Incisions in Open Wounds

In open wounds the incisions are made at an angle to the plane of the skin surface (Fig. 2) as these oblique wounds permit better coaptation and heal with less scarring

than vertical wounds. Usually only the skin is cut through, and most cosmetic work involves the skin only. In making two incisions whose edges are to be coapted later, as in excising tissue, the incisions must be made on the same angle (Fig. 3), so that the

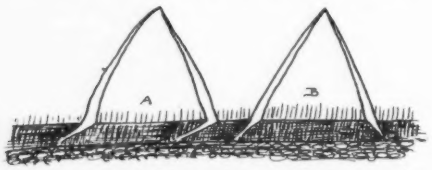


FIG. 3. A shows incisions made in parallel, allowing perfect apposition of the cut surfaces when approximated. B shows incisions made obliquely but *divergent*, hence rendering apposition of the cut surfaces practically impossible for cosmetic effects.

two opposing surfaces will correspond when the wound is closed. All incisions should be made, if possible, in one continuous clean-cut line, without snipping, hacking or nicking, as such technic produces only a form of laceration.

Incisions should be located, as nearly as possible, in places where they will be invisible, unobtrusive and not disfiguring. To this end we make use of the natural lines, wrinkles, furrows, and angles of the face (Figs. 4 and 5) and neck. Thanks to the elasticity of the skin many operative procedures can be carried on through incisions located some distance from the actual site of the operation. Ignorance, or neglect of this principle has resulted in much disfigurement of many faces and in not a few cases the work has been so crudely done as to amount to malpractice.

FIG. 4. The lines of the face as found in early life: if not plainly visible when the face is at rest they are very distinct during the muscular action incident to the expression of the emotions, also during the course of certain diseases.

FIG. 5. Lines of the face as seen in aged persons or in those who have been very free in their emotional demonstrations. Included with these is the wrinkle of the double chin and the crease over the root of the nose due to wearing spectacles.

Plastic Work, and Transplants and "Implants"

Plastic work is one of the essential features of cosmetic surgery, one upon which depends fully three-fourths of our operative procedures. The several methods used in plastic manipulations have been most concisely tabulated as follows:

1. Simple approximation of fresh edges.
2. Sliding of parts into position after transferring the tension to adjoining localities.
3. Transplantation with a pedicle (a) by immediate implanting, and (b) by gradual implanting through successive migrations.
4. Transplantation without a pedicle (a) of large areas of tissue and (b) by skin grafting with small pieces of tissue.

5. Retrenchment, or removal of portions of superficial material, either eliptical, semi-eliptical, triangular or wedge-shaped, and healing with cicatricial contractions.

Transplants and grafts may be of any tissue and may be autoplastic, homoplastic or heteroplastic. Metal, celluloid, rubber and sponge implants are frequently used as a support for parts lacking stability and as a means of eduction in granulating wounds. Implants of "bone wax" and paraffin are used to fill out cavities and to overcome minor defects of the features.

The Importance of Accurate Coaptation

Where incisions are made with intent, one consideration should be the later coaptation of the wound-edges, and the incisions should be shaped with that end in view, even if some tissue has to be sacrificed. Coaptation should be as free from wrinkles, kinks and puckers, and with as little tension as possible. To secure this without disturbing the relations of underlying tissues the peritraumal skin may be loosened up and its elasticity used to advantage. Tension sutures are also useful in preventing any undue strain upon the parts which might result in breaking up or hindering a perfect approximation. Before closing the skin wound it is *absolutely* necessary that all severed subcutaneous tissues be brought together, layer to layer, in as accurate apposition as possible and so sutured, using the smallest practicable catgut for soft tissues, and magnesium wire or chromic gut for bone.

Sutures should be put close together, not over one-quarter of an inch apart and so placed as to draw the parts together without puckering. They may be continuous, interrupted, mattress, twisted, quill, shot, button or whatever form the needs of the case or the fancy of the surgeon may dictate; *but they must coapt accurately and smoothly.*

The Importance of Drainage

Drainage is an element which enters into but few cosmetic procedures, as most of the operations are aseptic and made with the idea of securing union by first intention. Drainage implies healing by granulation with suppuration and more or less resultant scar. In gross wounds, the rubber and glass tubes are used; in smaller ones, a few strands of silk-gut will suffice, and in many cases, especially where the presence of a foreign body in the wound is undesirable, a covering of antiseptic absorbent gauze, suitably placed, will, by its capillary attraction, draw out of the wound all excess of secretion which might offer a field for infection.

Dressings are applied to a wound to absorb discharges, to protect from germs, to protect from heat, cold, wind, rain, snow, and the like, to protect from the rude public gaze, from inquisitive friends and relatives and to protect against additional injury from extraneous sources. The materials used are those of ordinary aseptic and antiseptic practice.

As to changing dressings, my practice has been to remove the first dressing within twenty-four hours, inspect the wound, cleanse or apply such treatment as may be indicated and apply the second dressing. If healing then progresses satisfactorily, by first intention, the wound is not disturbed for several days. If healing by granulation, it is dressed as often as needed, *but not too often,* lest unnecessary handling interfere with granulation and invite infection. The special dressings for the various operations will be discussed as cases involving those operations are presented.

Subcutaneous and submucous methods are resorted to chiefly to avoid external and visible scars; in some cases these methods offer the most satisfactory methods of treatment. The method of overcoming structural deficiencies by paraffin prosthesis is one form of subcutaneous work which has brought joy to thousands. Electrolysis for the destruction of moles and removal of hair, the application of carbon dioxide, photo-therapy, the use of chemicals and other "nonsurgical" methods of treatment will be considered in cases to be presented later.

[*To be continued*]

What Others are Doing

COLCHICINE IN RHEUMATISM

Writing in *The Clinique* (Oct 1914, p. 570), A. F. Blackwood says that colchicum, or its active principle colchicine, should be kept in mind when treating rheumatic cases showing a gouty tendency. Doctor Blackwood declares that irregular gout is more common in America than some of us think. In such cases, the pain is of a sticking character, worse toward evening, the inflamed joint is extremely sensitive to touch, and the pains shift from joint to joint.

Try colchicine, but do not forget the importance of eliminators and antacid treatment.

NOVEL TREATMENT FOR CHRONIC MUCOUS COLITIS

Dr. G. Milton Linthicum (*Med. Rec.*, Oct. 17, 1914, p. 662) agrees with Cohnheim, that the neurotic theory of the etiology of chronic membranous enteritis is unsound. He believes that mucous colic is really an acute exacerbation of a chronic membranous colitis. The visual picture through the proctoscope reveals the presence of such an inflammatory condition, which may be either hypertrophic or atrophic.

In treating mucous colitis, Linthicum has had best success by forcing iodine fumes into the bowel. After various trials, he settled down to the use of iodine crystals.

The apparatus employed by Doctor Linthicum consists of an ordinary 500 Cc. Florence flask, with a double perforated rubber stopper connected on one side with a pressure tank or bulb, and on the other side with a glass tube, to be connected with a glass tip for insertion into the rectum. The iodine is fumed by means of a small electric stove placed beneath the flask, although a Bunsen burne or alcohol lamp may be used.

With the patient in the knee-chest position, if a man (or the Sims position, if a woman), the gas is then blown into the bowel until the patient complains of some cramping or distress, whereupon the air is allowed to escape and the insufflation is repeated until altogether the vapor from 2 Grams of iodine crystals is used.

Before giving these treatments, the patient's bowels must be irrigated thoroughly. Suitable diet and regular habits are of course ordered. Constipation is a primary factor in the disease and must be removed.

By this method, Doctor Linthicum declares that he has had very excellent results, as shown by the report of four cases.

INTESTINAL PUTREFACTION AS A CAUSE OF CONVULSIONS

A striking illustration of the power of intestinal putrefaction to produce alarming symptoms is illustrated in an article by W. L. Thompson in the *Boston Medical and Surgical Journal* (Nov. 26, 1914, p. 819).

The patient was a boy of six years, who had been suffering more or less from spasmodic seizures since he was two years old. When first seen by the doctor he was having severe convulsions, and as many as forty of these a day. During the doctor's visit, of a half hour's duration, the child had two of these convulsive seizures. There was no frothing at the mouth, no outcry, no warning and no loss of consciousness, and therefore the doctor questioned the diagnosis of epilepsy which had been made by a number of other physicians. An examination of the urine showed the presence of a large quantity of the sulphoconjugate ethers, pointing to an intense putrefactive process in the intestinal canal.

A careful examination of the patient led to a rejection of the diagnosis of epilepsy and to the adoption of the following treatment: Exclusion of proteids from the diet, and the administration of a combination of zinc sulphocarbolate and cascara sagrada at four-hour intervals. After five days of this treatment, the number of convulsions had fallen from 40 a day to 12 a day.

On the sixth day, half an ounce of magnesium sulphate was administered in hot water, and upon retiring five grains of thymol was given; and the following morning another half-ounce of magnesium sulphate was ordered.

After complete evacuation of the bowels, the patient was placed upon Bulgarian-bacillus cultures and urged to drink freely of buttermilk.

Under this therapy, the patient's convulsions rapidly diminished in number, and within ten days from the beginning of treatment, they had entirely disappeared. During the succeeding seven months there has been no recurrence.

ASCARIDES AS A CAUSE OF SURGICAL DISEASES

That threadworms not always are those harmless parasites—to be grinned over—they commonly are considered, is pointedly illustrated by an article published by Schloessmann (a Suabian physician) in the *Beitraege zur Klinischen Chirurgie*, No. 3 current; indeed, they may become a serious menace when transplanted from their normal habitat, the small intestine. This is the author's evidence:

Within the brief period of two years, the author encountered not less than 11 cases of the kind in question. (Threadworms are very prevalent in those regions.) On 6 occasions, the parasites were found in the abdominal cavity itself, having penetrated the appendix-walls. Ileus was caused in 2 instances: once through a chronic obduration [thickening?] of the intestine, while in the other the partial occlusion brought on by an intestinal twist was aggravated by the presence of ascarides. Peritonitis was seen in one instance, the irritation having resulted in inflammatory exudation.

One of the cases was a peculiar ascaridial appendicitis. When the author was examining the appendix (upon laparotomy), the latter suddenly began to squirm most grotesquely and to stretch out by about half its normal length. A threadworm was found to have entered to about two-thirds of its own length. As to this feature, Schloessmann explains that not every such invasion necessarily leads to a traumatism of the organ—to terminate thus, the parasite must have remained in the appendix for some time, and feces must have accumulated.

In regard to the management of surgical diseases caused by ascarides, Schloessmann is decidedly conservative, holding that by no means always is surgical removal of the invaders imperative, even though the operator may be tempted to it after laying the abdomen open; this especially so where ileus is dependent upon spasm or thickening of the gut; rather should conservative internal therapy still be relied upon under such circumstances. Thus, twice did he effect a cure by expelling the worms with the aid of santonin, 117 of them passing in one instance and 489 in another. On the other hand, the mechanical extraction of such worm-convolutes is liable to lead to peritonitis.

MODERN TREATMENT OF AMEBIC DYSENTERY

Special emphasis is laid upon the frequency with which amebic dysentery occurs in our northern states in an article by Edgar F. Haines in the *Boston Medical and Surgical Journal* (see p. 816, Nov. 26, 1914). He reports the experience of Giffin, of the Mayo clinic, who, during a period of two and one-half years, examined the stools of 1700 patients and found the specific *Entamoeba histolytica* in those of 79. In these 79 cases, the patients came entirely from the northern states, that is, Minnesota, Iowa, North Dakota, South Dakota, Nebraska, Wisconsin and Montana. Only a very few of them had ever traveled in the south.

Doctor Haines is warm in his praises of the emetine treatment. "Those who have had experience in administering the ipecac treatment," he says, "know only too well how much pain and discomfort are done away with by the use of emetine." While in northern China, in 1912, it was the doctor's good fortune to see several cases of amebic dysentery which were being treated with the emetine. He says: "The European physicians of that locality were loud in their praises of emetine, and it seemed no less than marvelous that patients who had the Entamoeba histolytica demonstrated in their stools should be up and about their work while receiving the treatment, have no uncomfortable symptoms from the drug, the stools return to normal frequency and consistency in three or four days, while the active amebas disappeared in a like period in a large percentage of the cases."

Doctor Haines, in answering the criticism that relapses occur in cases of dysentery after emetine treatment, counters with the comment that relapses occur in syphilis after treatment with mercury and salvarsan, and in malaria after the treatment with quinine; yet no one denies the specific action of the drugs used in these diseases. The cause of relapse, as he points out, is the persistence of encysted forms of the ameba in the patient's bowel. He therefore thinks

that, in order to complete the treatment of amebic dysentery after the successful use of emetine, quinine irrigations should be resorted to; in other words, combined treatment by hypodermic use of emetine and colonic irrigations with quinine should provide the modern treatment.

AFTER-PAIN OF QUININE INJECTIONS

A serious drawback to the intramuscular injection of quinine is the after-pain produced at the injection site. A. G. Peter (*The Lancet*, Oct. 24, 1914, p. 994) has discovered that this can be prevented by adding to the quinine solution (usually quinine hydrochloride is employed) 1-2 grain of quinine and urea hydrochloride.

Since using this method, Doctor Peter says he has had no complaints from patients, even from those who are ordinarily very sensitive to quinine injections.

ACONITINE TO REDUCE HIGH BLOOD PRESSURE

After years of experience with this drug, Dr. William H. Thomson (*Amer. Jour. Med. Sci.*, Jan., 1915, p. 77) has come to look upon aconite as the most satisfactory vasodilator, and he finds this drug particularly indicated in the treatment of interstitial nephritis. The vasodilator drugs most requently used are the nitrites, including amyl nitrite, nitroglycerin, potassium nitrite and erythrol tetrantrite. These preparations are objectionable and unsatisfactory, according to Doctor Thomson. Not only do they act very suddenly and abruptly, but their action is very evanescent and therefore practically useless in the treatment of a chronic, persistent morbid condition, such as we find in arteriosclerosis, interstitial nephritis and sclerosis of the nervous tracts.

In every respect aconite is superior to the remedies of the nitrite class. One very important result of its use is *an increase in the elimination of urea;* and since the chief business of the kidneys is to eliminate urea, and since also in interstitial nephritis the quantity of urea excreted is diminished from the very beginning, the importance of a remedy which will increase its output is very apparent.

Doctor Thomson declares that in a series of cases under his care in the Roosevelt Hospital, the quantity of urea eliminated following the administration of aconite was doubled in a large proportion; in two cases it was increased to three times the amount present before this treatment was begun. At the same time there was improvement in all the other nephritic symptoms, including shortness of breath, vertigo, anginose pains, and melancholia, as illustrated by a number of cases which Doctor Thomson describes.

Doctor Thomson advocates the use of the old 35 percent tincture of aconite (U. S. Pharmacopeia of 1890) instead of the later preparation, which is only 10 percent. He says that he has given as much as 10 drops of this stronger tincture four times a day with excellent results. Large doses are necessary, since "the proper dose of a functional medecine is not reached until it causes its own symptoms."

The importance of employing a preparation of aconite which can be depended upon will naturally suggest to many of us the use of aconitine rather than one of the more or less unreliable galenical preparations. Aconitine can be safely pushed "to effect" in the conditions described.

THE EARLY SYMPTOMS OF TETANUS

It has been demonstrated again and again that tetanus can be absolutely prevented by the early injection of 1000 to 1500 units of a reliable tetanus antitoxin. Also, if the antitoxin can be given at the very beginning of symptoms, there is a fair chance of curing the patient. However, if the antitoxin is given after the disease is fully established, the likelihood of cure is not very great.

Under the circumstances, it is important that the physician should be familiar with what MacConkey (*Brit. Med. Jour.*, Oct. 10, 1914, p. 609) calls the "premonitory symptoms." These he says are varied and changeable, and commencing tetanus has been mistaken for a "cold," muscular rheumatism, stiff neck, sore-throat, influenza, mumps, and the like. He gives the premonitory symptoms as follows:

A day or so after the infection there may be general restlessness, changing suddenly to a desire to rest.

Sleeplessness with distressing dreams, and sometimes nightly delirium.

Difficulty in micturition due to spasm of the sphincter vesicae, which may last from a few minutes to half an hour.

Temporary giddiness, violent headache, excessive yawning.

The facial appearance changes and the patient looks anxious, though there is no risus sardonicus as yet.

There may be trembling of the tongue, which is put out to one side.

There is often profuse sweating, and darting pains in various parts may cause annoyance.

The patient may have a feeling of chilliness, and there may be some swelling, without redness locally, of the injured member, and throbbing of its arteries, notwithstanding that the limb is raised.

Slight jerking may follow pressure on the flexor tendons, and these muscles may be noticed to be in a condition of increased irritability.

THE COLLECTION OF LACTUCARIUM

At the last meeting of the International Congress of Pharmacy held in The Hague, Prof. L. van Itallie, of Leyden, read a short paper (*Jour. Pharm. et Chim.*, Nov. 16, 1913, p. 449), in which he described the method of collecting lactucarium at several places between Cochem and Punderig; the lactuca virosa plant being found in the wild state along the entire length of the river Mosel.

The height of the flowering lettuce-plant generally does not exceed one meter, although occasionally plants are found which reach the height of the cultivated plant. These when in flower measure two meters and a half, the stalk being a little more than one centimeter and the leaves from 12 to 15 centimeters. The stem is more or less woody and rarely exceeds 5 centimeters in diameter.

The reduction in the quantity of lactucarium employed has been so great that the cultivation of the plant is not as extensive as it formerly was. The author visited gardens at Kaimt, a little village near Zell. These gardens are situated at the foot of the mountain, and they rarely exceed 200 square meters in size. The plants are planted in May and transplanted in September.

The year following, in May or June, the plants flower and then are decapitated. The juice flows immediately and covers the cut surface. From then until the month of September, small sections are cut from the stalk, this being repeated, if time permits, five or six times a day. The women cut off one after another ten or twelve of the stalks, then return to the first, during which time the milk-juice has become thick enough to be collected, with the finger and knife, from the surface of the cut.

When the milk of ten or twelve plants has been collected in little bowls, it is allowed to dry slowly in the sun, possibly being removed from the bowls in the afternoon. In twenty-four hours the juice-lump is dry enough to be cut up into smaller pieces, which are again exposed to the sun. The milky juice, which is quite clear and of a white color, soon becomes yellow, and finally a pure brown, when it constitutes our lactucarium.

DANGEROUS NATURE OF BROMOFORM

In reporting a recent case from his practice, E. Guth, of Cladno (Hungaria), adds to the experience of others who have found bromoform a somewhat dangerous agent. This author tells (*Prag. Med. Woch.;* cf. *Muench. Med. Woch.*, 1914, p. 1242) of the toxic symptoms produced by this sedative in a child of 5 years, troubled with cough, after having taken [by mistake?] 6 Grams of it at one dose.

The child was seized with severe spasms and became unconscious, as the main symptoms of poisoning; from which it was relieved by means of artificial inhalation of oxygen, injection of camphor, and faradization. In view of the uncertainty of action, and more so as to its dosage, coupled with the danger involved, Guth recommends entire abandonment of this agent therapeutically.

AN ANTIVEGETARIAN ARGUMENT

The argument in favor of vegetarianism has been given us so many times by its enthusiastic advocates that it is refreshing to hear once in a while from the other side. We find an excellent statement of the case in a few words in a paper by Harry Campbell, in *The British Medical Journal* of October 3, 1914, p. 578). He says:

"Some are obsessed with an altogether groundless fear as regards the influence of animal food on the human organism. The endeavor to subsist on a dietary which shall not necessitate the taking of life is a commendable ideal, and one, perhaps, which man may one day realize—approximately, at least; but the view that man is by nature a purely vegetable feeder and that animal food has necessarily an injurious effect upon him is wholly fallacious.

"The fact is, as I have elsewhere sought to show, man owes his present exalted position in the animal scale to his carnivorism. This truth may not be palatable to the sentimentalists, but it is one which must be fairly and squarely faced. It was the search after animal food which led man's arboreal ancestors

to change an arboreal for a terrestrial life, and it was, I am convinced, the conditions entailed by a hunting career which brought about the evolution of the human. For, observe the curious situation of the prehuman anthropoid when he took to hunting—assuredly one of the most eventful and dramatic in the whole history of organic evolution. Here was a being lacking the stereotyped equipment for slaughter, instinctive and anatomical, of the carnivora, but gifted with an intelligence surpassing that of any other creature, and endowed with prehensile hands capable of giving effect to that intelligence. It was a situation in which intelligence counted in the life-struggle as it had never counted before, and it inevitably led to the evolution of man.

"This agile, intelligent, hand-endowed precursor of man was compelled to rely upon his *intelligence* in hunting his prey; for blind instinct he had to substitute strategy, for natural weapons, weapons made by hand. Once the prehuman ape started on his career of intelligent, as against instinctive, hunter, he began a struggle in which it was inevitable that a higher and ever higher grade of intelligence should continue to evolve, until sufficient mental capacity had been attained to render its possessor supreme as a primitive hunter—a grade of intelligence little short, I imagine, of that of the Australian aboriginal."

THE INJECTION TREATMENT OF HEMORRHOIDS

Surgeons generally have assumed such a contemptuous attitude toward the injection treatment of hemorrhoids that it requires some courage (especially on the part of a really eminent practitioner) to come out boldly in advocacy of the nonsurgical method. This, however, is exactly what Sir James F. Goodhart does in the December, 1914, number of the London *Practitioner*.

Goodhart does more than excuse the injection method of treatment; he goes a step farther, and declares that, in his opinion, the injection method is really safer than radical operation, and he makes a distinct plea for more frequent use of injection. "And I do so," he says, "because I happen to have seen a good deal of the partial and poor successes of the common operations, whereas the results of injection have seemed to me to be uniformly good. Some years ago, I became very dissatisfied with the results of ligature—more recently I have known of poor results by the Whitehead operation as well—first, because the patient was laid up for several weeks; secondly, because the shock of the operation may be very detrimental; thirdly, because, even within my own small experience, I have known of cases of serious local trouble afterwards, invaliding the patient for a long time; fourthly, I have many times found a definite membranous stricture at the anus, where an operation has been performed; and, lastly, so many have told me that there has remained, more or less permanently after operation, a state of discomfort in one way or another that was by no means pleasant."

Then, continuing, Goodhart says: "For many years now I have never sent any patient who might ask about the treatment of hemorrhoids to anyone who has not been known to me as largely adopting this method of injection, and I have never heard of a failure."

While he admits that there are cases which are not suitable for this treatment, yet, even in some of the doubtful cases in which he questioned the advisability of this method of treatment, Sir James declares that the result has been perfectly satisfactory. He has heard of the risk of embolism after injection, and yet he raises the question: "Does it ever occur? or is it only one of those statements made perhaps on the strength of a single case, and then handed on as authoritative? Why should it? Injection produces a local thrombosis truly, so does the natural course of the disease in many cases, and in so doing many a pile is cured spontaneously, as is very well known."

Does the objection to the injection treatment in America rest upon the same flimsy basis as Sir James alleges to be the case in England? Or is it as safe (or safer), as effective (or more effective), as the ligature, cautery, or knife? We should like to know. Who can (and will) enlighten us?

COMPARATIVE TEMPERATURES OF THE RECTUM AND THE ARMPIT

Remembering the fact that the rectal temperature is markedly elevated immediately following severe exertion, especially of the lower extremities (running, forced marches), with the temperature of the armpit remaining unaffected or even lowered, M. Englaender, of Vienna (*Deut. Med. Woch.*, 1914, No. 14), instituted pertinent observations of such temperature differences in inflammatory rheumatism, tuberculosis, *orthos* albuminuria, and vitium cordis.

In the conditions named, the author observed a constant disparity between the temperatures of the two localities; also, the rectal measurement positively is the more reliable. Further, if the temperature of the rectum registers higher than normal for the given time of day, even though the subject is at rest, then not merely a hyperthermia obtains, but it must be looked upon as a sign of some pathologic process—fever.

THE INTRAVENOUS TREATMENT OF ARTHRITIS

Some months ago (see p. 423, May, 1914), we gave the experience of two New York physicians who were using the salicylates intravenously in treating rheumatism. Another New York physician who is using this method successfully is Albert Comstock (*N. Y. Med. Jour.*, Dec. 5, 1914, p. 1113), who employs the following solution:

Sodium salicylate	gr. 640
Guaiacol	gr. 640
Glycerin	gr. 640
Sterile distilled water q. s. ad	Cc. 2000

N. B.—This solution must be filtered and placed in a sterile bottle, and will keep for about a week if shielded from the light.

This is usually given in a dose of 250 Cc., at a temperature of 110° F. It may be introduced into the vein with an ordinary Wassermann needle by direct stab, or, if preferred, after exposing the vein by dissection, using a cannula, of course, after local anesthesia.

Doctor Comstock resorts to this treatment, not only in acute rheumatism and acute gouty arthritis, but also in chronic muscular rheumatism and chronic arthritis. The method is contraindicated when there is atheromatous disease, nephritis, heart disease and inflammatory conditions outside the joints. Before administering the injection, the bowels are thoroughly cleaned out with calomel and a soapsuds enema, and the arm scrubbed about the elbow with green soap, followed by mercury-bichloride sterilization.

The first effect of the injection is tingling throughout the body and a coal-tar taste in the mouth, due to the guaiacol. The face becomes congested and free perspiration begins. Slight delirium follows, lasting from 15 to 30 minutes. After injection, the arm must be dressed aseptically, a tight bandage being employed if the stab method of injection is resorted to, in order to prevent seepage into the cellular tissues.

In acute articular rheumatism, the results following the use of this method of treatment are almost instantaneous. The fever promptly subsides and within 24 hours the patient usually asks to get up. In muscular rheumatism, the results are not quite so prompt; sometimes a second treatment, in about two or three days, may be required. In chronic cases, the injection must often be repeated two or three times, at intervals of three or four days, before the patient can be pronounced cured.

Doctor Comstock has treated more than 50 cases by this method, and has never seen any bad results except from the slight delirium, to which reference has already been made. In one or two patients there was some gastroenteritis. Blood pressure is not markedly affected.

PILOCARPINE TO ABORT ERYSIPELAS

Da Costa and Bartholow, of Jefferson Medical College, long ago recommended the routine use of pilocarpine to abort a beginning erysipelas. W. A. Wiseman (*Ill. Med. Jour.*, Dec., 1914, p. 587) has been using the pilocarpine treatment for a good many years and has found it very satisfactory. He offers as an explanation of the benefit following its use the discovery of Waldstein, that pilocarpine greatly increases the number of white blood-corpuscles. By so doing, this alkaloid directly combats the streptococcus invasion now known to be the cause of erysipelas.

Doctor Wiseman's experience is in accord with that of many readers of CLINICAL MEDICINE, which for many years has been advocating the use of pilocarpine, especially in the earlier, formative stage of erysipelas. The drug should be given hypodermically, and just as soon as the diagnosis can be made.

DOES PYORRHEA CAUSE IRITIS?

W. M. Beaumont, writing in *The British Medical Journal*, September 26, 1914 (p. 525), quotes Lang's statistics, to the effect that 64 percent of the cases of iritis attributed to sepsis are caused by pyorrhea alveolaris. He is convinced that this disease is undoubtedly the most frequent cause of this form of iritis, although, as he declares, "it cannot be too insistently brought to mind that the patient with pyorrhea may also be a sufferer from syphilis or gonorrhea." However, in a patient suffering from this form of eye disease, careful examination should be made of the mouth and, if it is diseased, appropriate treatment should be instituted. Doctor

Beaumont says that drastic treatment is warranted in these cases, and, if necessary, all foci of disease should be removed by extraction of the offending teeth. As he puts it, "The cure of iritis is of paramount importance, and it is better to lose thirty-two teeth than one eye."

Now that it has been demonstrated that we have in emetine hydrochloride a real specific for pyorrhea, through the use of which we can not only cure the disease but usually save the teeth at the same time, it is apparent that this alkaloid should be given a thorough trial whenever the iritis is complicated with Riggs' disease. However, the possibility of syphilitic infection should always be kept in mind. Wassermann tests will usually settle the diagnosis.

HUMORISTICS: ORIENTAL MODESTY EXEMPLIFIED

A strikingly characteristic humorous episode is related in a recent issue of the *Muenchener Medizinische Wochenschrift*, which, having been yielded space in that staid, dignified publication, may well be accepted at its face value. The story runs thuswise:

At the occasion of the second International Lepra Conference held in Bergen in the year 1906, Kitasato, the Japanese investigator, formerly connected with the Bacteriologic Institute at Berlin, was presented to King Haakon. The latter, as a compliment, remarked, "You were the associate, were you not, of Koch and Behring?" Came the answer, in dignified tones: "Your Majesty will pardon, Koch and Behring were my associates in the work."

INDICANEMIA AND ACETONEMIA (UREMIA)

Neither in the sound nor in the sick, T. Tschertkoff, of Charlottenburg, sets forth (*Deut. Med. Woch.*, 1914, No. 36; cf. *Muench. Med. Woch.*, 1914, p. 1976), can retained urea or indican be demonstrated in the blood-serum, unless there is renal insufficiency, and then independent of the diet. Further, in serum of nephritics exhibiting marked urea retention indican is a regular constituent, and invariably present when the urea falls below 1.5 pro mille. In chronic nephritis, indicanemia in connection with a urea content of the urine as low as 1.5 pro mille constitutes an unfavorable prognosis, a symptom indicative of a serious, unremediable alteration of the kidneys. As the sole sign of renal insufficiency, indicanurea remains even in those cases where acetonemia (uremia) has been reduced to norm by means of extraneous, alimentary influences.

ANTITHYREOIDIN IN EXOPHTHALMIC GOITER VALUELESS?

At the Serum Institute at Copenhagen, C. Sonne has been investigating the influence of antithyreoidin upon Basedow's disease, or, exophthalmic goiter. His experiments (described in full in the *Zeitschrift fuer Klinische Medizin*, Bd. 80, No. 3) were modified in every possible direction and properly controlled, and the subjects, besides rabbits and cavies, were 80 victims of the malady. The conclusions finally arrived at were, that no specific action whatever could be observed from the "socalled" antithyreoidin.

FIRST AID TO THOSE IN NEED OF ARTIFICIAL RESPIRATION

The Bureau of Mines has recently published ("Technical Paper 77") the report of the Committee on Resuscitation from Mine-Gases, the members of this committee being W. B. Cannon, George W. Crile, Joseph Erlanger, Yandell Henderson, and S. T. Meltzer. One of the results of these investigations is the recommendation of the Bureau of Mines that whenever, for whatever reason, artificial respiration is instituted, the following methods be adopted:

In gassing (being overcome by gases), remove the victim at once from the noxious atmosphere. Carry him quickly out into the fresh air and instantly institute manual artificial respiration. Do not stop to loosen any clothing, for every moment of delay diminishes the chance of recovery.

In case of electric shock, break the electric current instantly. Free the patient from the current with a single quick motion, using any dry nonconductor (clothing, rope, glass, board) to move the patient or the charged wire. Beware of using for the purpose any metal or even moist material. Meantime have every effort made to shut off the electric current.

Attend instantly to the victim's breathing. If the victim is not breathing, manual artificial respiration must be resorted to at once.

If the patient is breathing slowly and regularly, do not employ artificial respiration, but let nature restore breathing unaided.

In gas-poisoning, administer oxygen, if available. Also employ manual artificial respiration. The oxygen is supplied through a breathing-bag from a cylinder. The latter, for this purpose, has a reducing valve, and is supplied with connecting tubes and face-mask, and an inspiratory and an expiratory valve, the latter communicating directly with the atmosphere.

No mechanical breathing device should be used for resuscitating, except it be one operated by hand and having no suction-effect on the lungs.

Employ the Schaefer, or prone, pressure method of artificial respiration. Begin at once. A moment's delay is serious. Proceed as directed in "Miners' Circulars" Nos. 5 and 8 of the Bureau of Mines.

Patiently continue, without interruption, the artificial respiration, if necessary, for two hours or longer, until natural breathing is restored. If natural breathing stops after having been restored, again institute artificial respiration.

Do not give the patient any liquid by mouth until he is fully conscious.

Place him where there is fresh air, but keep his body warm.

Send for the nearest doctor as soon as the accident is discovered.

The Committee of the Bureau of Mines referred to above also discusses at considerable length, in "Technical Paper 77," the four mechanical devices (pulmotor, the Brat apparatus, the lungmotor, and the salvator) that are now on the market and in quite common use for instituting artificial respiration. A careful analysis is made of the literature upon the subject of devices of this kind, and the final conclusion of the committee is that on the whole it disapproves of them, or at least of the pulmotor and the Brat apparatus, which two it has examined. The committee declare that these instruments are objectionable, because repeated suction of the air from the lungs is not physiological and, if continued, is likely to result in injury to the lungs and to inadequate inflation. It also disapproves of the pulmotor, because the automatic mechanism is so easily disturbed as to be very liable to fail at critical moments.

The committee, however, recommends the use of an apparatus devised by one of its members, Dr. S. T. Meltzer. One of the objections to the pulmotor and similar apparatus, namely, the fact that it permits of entrance of air into the stomach, is guarded against by the use of the Meltzer apparatus. In addition, a weight is to be placed upon the patient's abdomen, in order further to restrict the entrance of air into the alimentary canal. It is declared that this apparatus is free from sucking action during expiration, is light, simple, inexpensive, is readily understood by laymen, and can be used to deliver pure oxygen. This is an important consideration in the treatment of gas-cases.

ON THE SIGNIFICANCE OF ALBUMIN IN THE SPUTUM OF CONSUMPTIVES

G. Hafemann, of Beringhausen, makes the following concrete pronouncements (*Deut. Med. Woch.*, 1914, No. 36; cf. *Muench. Med. Woch.*, 1914, p. 1976): As a fundamental rule, the following may be accepted: If the sputum of tuberculous persons contains no albumin, no bacilli are present. Conversely, if tubercle bacilli are found in the sputum, then it also contains albumin. (Albumin alone in closed cases.) Quite generally accepted is also this dictum: A single positive find of albumin does not permit of any definite conclusions; on the other hand, a single negative finding excludes existence of phthisis.

The author, in addition, assumes that the albumin in the sputum of consumptives is serum-albumin derived from the fine bronchial alveolar tubules [orig.—"gefasse"—vessels—?]. He also inclines to the idea that this albumin originates from the metabolic and catabolic processes of the tubercle bacilli themselves.

PEANUT-MILK REPLACING ALMOND-MILK FOR INFANTS

While in this country we hardly ever hear of the socalled almond-milk for feeding infants, the emulsion of sweet almonds is largely in vogue in Europe, particularly so in Germany and closely connected Scandinavian countries, being a favorite nutrient for the newborn and older infants when deprived of mother-milk, as also in digestive troubles when milk must be withheld—given alkalinized in icterus neonatorum. Continental physicians also prescribe "lac amygdalæ" largely for the body of certain mixtures taken in tablespoonful doses, to serve as a bland diluent.

Unfortunately the cost necessarily con nes its use to the more prosperous, a situation now aggravated by the present rising price of almonds. Hence, it is well that someone (R. Randnitz, of Prague, in *Duet. Med. Woch.*, 1914, No. 36) points out the equal

value of peanut-emulsion, which satisfactorily replaces the other, while at prevailing prices it costs but one-sixth as much. The peanuts used must be roasted, and Chinese, Javanese, and African varieties (these in European commerce) are named as serviceable; there seems no reason, though, why any other—the American—should not do as well.

According to circumstances and age of child, when the "milk" serves as food, there are added sugar, malt-extract, farinaceous substances, acorn-decoction, and, later, increasing proportions of milk, with gradual transition—for older children—to normal diet. Directions for preparing the emulsion are found in the Dispensatories and Pharmacopeias. [The writer of these lines, in years gone by, never cast away the pulp left after expressing the emulsion of almonds: with a little sugar incorporated, it formed a palatable and nourishing sweetment.]

OIL OF TURPENTINE AS A PROPHYLACTIC AGAINST UTERINE INFECTION

For the prevention of puerperal and other gynecologic infections, H. Cramer (*Monatssch. f. Geburtsh.;* cf. *Ther. Monatsh.*, 1914, No. 8) has found oil of turpentine an excellent agent; having employed it for this purpose extensively in the Friedrich-Wilhelm-Stiftung at Bonn. He simply moistens a wad of cotton with the oil and swabs out with it the uterine cavity. If it is a case of abortion, prior complete removal of placental remnants, of course, is imperative. The turpentine-oil, in the author's opinion, acts not alone as a bactericide, but also by inducing a massive afflux to the wound-surfaces of leukocytes. During the first few days, vaginal irrigations are to be omitted.

As a prophylactic measure, Cramer introduces oil of turpentine tampons preliminary to operations in the vagina, ascribing much of his good results in operations for carcinoma to this measure.

FORMALDEHYDE FOR CLIMACTERIC BLEEDING

In a contribution to the *Zentralblatt fuer Gynaekologie* (1914, No. 36), E. Gerstenberg, of Berlin, reminds the readers that as long ago as 1900 he recommended formalin of full strength (undiluted 40 p.c.) for checking the bleeding of the menopause. Now, after an experience of fifteen years with this treatment, he reaffirms his claims. His procedure is a simple one.

Playfair sounds are wrapt with absorbent cotton and these saturated with the concentrated solution of formaldehyde. Then these sounds (several of them) are introduced into the womb and held in contact for fifty seconds. After their removal, an absorbent-cotton wad (with string attached) is placed before the portio, this to be removed in from three to twelve hours. (The determining factor is not named.—Ed.) Untoward effects, such as colic, swooning, stenosis, infection, never have occurred; the sole accident to be feared being possible detachment and loss of a formalin cotton wad in the womb.

EBNER'S DECALCIFYING LIQUID

For decalcifying microscopical objects, Ebner recommends (*Pharm. Praxis*, 1913, p. 259) the following fluid: (a) Hydrochloric acid, C. P., Cc. 7; distilled water, Cc. 100; cold-saturated solution of sodium chloride, Cc. 100; or, (b) Hydrochloric acid, Gm. 2.5; sodium chloride, Gm. 2.5; water, Cc. 100; alcohol, Cc. 500.

HEMATOLOGIC ASPECTS OF VARIOLA AND VACCINIA

Interesting and clinically valuable studies of the blood in smallpox and in cowpox have been conducted by M. Schatzmann, of the Medical Clinic at Bern, the results of which he has published in the *Zeitschrift fuer Klinische Medizin* (Bd. 80, No. 4). The work concerns the changes in the different cell-elements of the blood during the various stages and phases of the two respective pathologic conditions. We will not here reproduce the fulsome figures presented, among which the leukocytes stand out strikingly (they may be looked up, also, in the *Muench. Med. Woch.*, Sept. 24, 1914), but want to point out the fact ascertained, that there exists an almost complete analogy between the blood-pictures of the two processes, in all respects; thus proving the conception of the virtual identity of variola and vaccinia.

Miscellaneous Articles

From the Firing Line in Belgium

FROM an experience of over five months in active operation on the field, I have seen many changes in the medical adjustments necessary to meet the demands of the shifting conditions.

In the regiment to which I was attached, made up very largely of men of more than usual capacity and standing in the social and financial world, not over ten or a dozen are known to remain among the living. Some of them probably are prisoners, some are in the hospitals, but the regiment is, practically, destroyed.

My experience of getting on the firing-line, then being transferred to the hospitals in the rear, and finally returning to the firing-line by request has convinced me that the surgical knowledge one can get in this tumultuous conflict is very small, compared with the risk and exposure.

All the hospitals in France and Belgium have a changing population and the study of individual cases is very transient. In the American Hospital of the Red Cross near Paris the changes are less, but even here the moment a patient becomes able to go out, he is sent home, so as to give place to others who need the more urgent treatment.

Many of the English hospitals at Boulogne are managed by most excellent men, but their opportunities are all too short to follow cases long enough to secure data that are at all reliable. Like all the other hospitals, they are constantly being emptied, to be refilled from the front.

One event will be of interest, because it gives some idea of this confusional state. The Germans, for several days, made most strenuous efforts to break through the line at points within a few miles of each other. Two field hospitals were established, and the wounded were very numerous and required all the attention and aid that could be supplied.

One day, after a severe engagement, I was particularly impressed with the independent work of a Red Cross surgeon, who had a red handkerchief around his neck. There was something so independent and clever in his work, without hesitation or deferring to the opinions of others, that I was attracted to him. As chief superior of hospitals, it was my duty to look over the work done. Many of the surgeons would hesitate and consult with others in grave operations. Sometimes this hesitation would be evident in the attention of the other surgeon who would be attracted to a patient to observe and advise. I saw that this man went right on, without the slightest hesitation; and it was evident that he was a very skilful operator, as well as a man of good judgment.

One morning, after a very serious operation, I said to him: "You are a good operator, 'Yank,'" having formed the impression that he was an American; so, I addressed him in this jocose way. He turned in a moment and said, "Yes, 'Johnnie,' I am."

I said, "What are you doing here?"

He answered, "God only knows, but if I get back to old Kentuck' you will never see me following the army any more."

I inquired why he did not work in the hospitals in the rear, saying that his work would be of far more value there than on the front. He answered laconicly: "Too much red tape. I am not fitted to work under a man who knows less than I do. Can't get any information down there. They follow plans and systems. Up here, we can do as we think best, and nobody calls us to question."

I said: "You are right, 'Yank'. That's why I am here on the front. There is more real, genuine surgical work here than down the line. We see things just as they are here, but the minute the poor patient goes to the rear innumerable complications set in."

After a pleasant few minutes' conversation, I invited him to take supper with me at 6 o'clock. He said he would come. I said, "We ought to get acquainted." We called each other "Yank" and "Johnnie", and he seemed pleased at this free and easy familiarity.

I went to another part of the line. I returned before 6 o'clock and waited for half an hour for my new-found friend. He did not come. The next day I made inquiries and found that he had gone out toward the trenches at about 4 o'clock in the afternoon with some stretcher-bearers, and that was the last seen of him. At about that time, the Germans had made a furious charge on the lines in that neighborhood, and, judging from the number of wounded that wer brought back that night and early next morning, the mortality was very great. The next day I made other inquiries, but no one could give me any clue. I tried to find the doctor's name on the hospital-list, but, as he had only been there a day or two from the rear hospitals, his accession was not recorded, and, if so, there was no clue, as I had not asked him about his name or location.

The third day afterward, I found that a number of prisoners had been taken that afternoon, and the next day the dead were so numerous that they had been put in trenches, with little reference as to who they were or anything concerning them. Thus my new-found friend, Doctor "Yank," disappeared. Whether he was captured and is a prisoner, or whether he was killed and buried in the trenches, I do not know.

The cold weather of Christmas and the heavy snows checked the firing, except by the artillery. Every now and then a few trenches would be the scene of a short bloody conflict, sometimes being taken and then retaken; and the wounded brought back, showed more than ever evidence of stab- and bullet-wounds.

The sharpshooters are in constant evidence and every exposed situation is full of peril. Experience has brought a great deal of practical mobilization of the field hospitals in the transportation of the wounded, and the ability to adapt themselves to any sudden change that may occur.

The motor soup-kitchens have developed a degree of perfection that would astonish one, both at the hospitals and in the trenches. The rations, soup, and coffee and bread, are delivered with the utmost regularity and perfection, and, while there are hardships, there certainly never was an army better fed and better cared for than the English troops on the battle-line today.

Motor ambulances, to take the wounded back, and field hospitals established in any available place possible are attaining a high degree of perfection, and the surgeons and nurses are acquiring a skill and adaptability that is really astonishing.

One morning during the holidays over 500 wounded men passed through one of the field hospitals. At another place, a few miles farther on, an equally large number. This gives an idea of the work that is done and the fierceness of the conflict on the front.

It is the opinion of those who know that the entrenchments of both armies have reached a practical deadlock situation which is not likely to change, unless some very startling event occurs. Abundant supplies of winter clothing and comforts for the troops on the front are coming in all the time, and were it not for the continued artillery duels the situation would not seem so distressing.

My work covering over a dozen field hospitals would seem to indicate that there is not much that is new in the surgical treatment which is given, but that the manner of receiving and sending the patients back is becoming more and more efficient. Occasionally a fever case or one of acute rheumatism comes through our hands, but is promptly transferred to places in the rear, where these cases are exclusively treated.

I think the home surgeon should be thankful that he is not here on the front or in the hospitals in the rear, trying to become more experienced and proficient, but really picking up very little that is new and observing very much less in the operative lines than in any previous war.

The medical journals of the future will be full of stories of experiences of surgeons and laymen, much of which will be fiction. The facts are few and by no means extreme or startling. Treatment of contusions, concussions, perforating wounds from balls and shells constitute the daily routine. Occassionally a case of traumatic shock startles us a little. The explosion of a shell, while not producing any visible injury, has caused unconsciousness and coma in some cases. These men are carried back to the rear, paralyzed. Several days pass before they regain full possession of themselves.

Exactly what has happened cannot be determined. A very useful and capable head-dresser in one of the hospitals was suddenly made unconscious by a bursting shell, and there was not the slightest evidence of any external injury. He was taken back to the rear, recovered his consciousness, but was found to be hemiplegic. Occasionally, something out of the usual will occur, but, as we have only the first examination, we have a

very imperfect idea of what really has occurred and what will be the consequence.

Many physicians are resigning from the service, and younger men are taking their places. This no doubt is owing to the conviction that the end is not yet, and the desultory fighting of the present may continue for some little time. The romance and the novelty of war passes away very quic .ly for the medical man, and the conflicting questions of whether it is his duty to stay on the front, in the rear or go home are troublesome ones.

"BRITON."

"WHAT CAN THE DOCTOR DO FOR HIMSELF?"

The editorial in the December issue of THE AMERICAN JOURNAL OF CLINICAL MEDICINE, under the above title, proved interesting reading to me, and I presume to a thousand or so of other physicians; and, I must confess that, while I cannot complain of the loss of any hair through rubbing it off in trying to solve my own problems of the professional side, I can say that I have lost considerable sleep over the financial matter and creased my brow with several lines that would better be off.

This is not a problem that can be solved by one editor or by one lone practicing physician; for, while there are general principles that apply to every physician engaged in active practice, that will make for success, yet, he must have sufficient reasoning-capacity to work out the details of his success, in the section of the country in which he is living and under the conditions in which he is placed.

The mere matter of fees is vastly different in one section of the United States from the standards prevailing in some other parts. When it comes to making collections, the doctor will have to take into consideration whether his people have money in the bank with which to pay their bills, or whether their payday comes every week or month or twice a year or only once.

I enjoy reading the experiences of other physicians, whether in the way they conduct the business end of the profession or in relating the many professional experiences that come to them. And the reason why I have not indulged in writing my own thoughts on the matter has been that, after reading the writings of others, their work seemed so much better than what I was able to do that naturally I remained in the background.

Still, it is not fair to receive continually, and keep on expecting to receive, without making any effort to reciprocate. And, though my experiences may not be as rosy as those of others nor so instructive, yet, by study and the application of better business principles to the business I have gradually increased my proficiency as a physician and also improved my earning capacity, and not only earned more money, but also collected more closely as years have come and gone.

My methods and experiences may be of service to some man or woman in the daily routine of looking after the ills of the human race, and if even one such person be benefited I shall feel amply remunerated for the effort thus put forth.

There are many features that enter into the career of a practicing physician and make for success. Some men seemingly are endowed with all the characteristics necessary, and they enter the field of medicine fitted in every respect for an ever increasing practice and a lucrative income. The great majority of men who enter the ranks of physicians and surgeons are handicapped in one way or another. They have to learn in the daily ups and downs of life the lessons of how to be successful. A few learn rapidly and well; a greater number are a lifetime at the job, and in other instances there are some who never learn.

The statement that "doctors are poor business men" has been made so often that the laity, and even the physicians themselves, have become to feel that this is an axiom. However, when you look over the field of business, from the farmer to the manufacturer, and take account of the failures recorded from year to year and then compare the result with the failures among the medical fraternity, you will conclude that we are not such gross imbeciles as some persons would have you believe. The reason for this general idea of the physician's business unfitness is, that we come in closer contact with the men who are really successful in their particular line. They were experienced in business methods before they entered into competition with others in the same kind of enterprise; while, as a rule, the physician enters the field of medicine without any previous business experience. And the contrast between the seasoned business man and the practicing physician is, indeed, great, and often is commented upon. Hence, the poorness of our commercial rating and business standing.

One of the first prerequisites of a successful physician is a thorough medical education. This, of course, begins in the school where the aspirant takes his M. D. degree, and which furnishes him with a foundation upon which to build his future work and structure. Whether it shall stand as a monument to his skill, or fall, depends upon the mind that rears the structure.

If financially able, the aspirant, who, after securing a degree from the school of choice, will take a year's study in each of the other two schools of medicine, will thus be much better fitted to prescribe intelligently for patients than will the one who confines himself to a single system. Some doctor may pooh-pooh this statement; but to him who does I will say, however well versed he may be and however successful, he will know more by understanding how the other fellow does his work.

It is a grave mistake for any person who receives a degree in medicine to think that his days of study and research are over. In reality he has only begun. While he may not do so in quite as systematic and regular form as when in school, he does so now with more precision and thoroughness; not as a parrot learns, but with the thought of being ready to use this knowledge at a moment's notice. If successful, he will have to keep on studying, in order to keep abreast of the progress being made in the way of doing things—and that really is what counts with the patrons.

However, he who confines his reading to the ordinary textbooks and the state medical journals makes a grave mistake. Well-selected matter of this kind, of course, should be upon your desk or at hand for reference, but for practical, cold, hard facts that you will need every day through the year, you must look elsewhere. To be up to date and to meet the demands of your patrons for efficient service, take the better ones of the independent medical journals and get the many small volumes from the pen of men who have made a special study of the subject upon which they are writing. During my experience of nearly twenty years in the practice of medicine, I have received more genuine benefit from the independent medical journal and from perusing the contents of a small volume from the pen of a practical writer than from all of the standard textbooks and state journals combined.

When first entering upon the duties of a physician, I thought all that was necessary for the business was two rooms for an office, with the necessary furnishings, an operating-chair, a few instruments, an obstetrical bag and hand medicine-case, and a prescription-pad. However, within the first five years of practice, my views became very much altered and I found it absolutely necessary to learn a little more as to how the medical business should be conducted to make it more remunerative, by being able to do better work in the treatment of present patients, and how to secure new patrons.

Although I had no difficulty in handling the acute diseases with which I came in contact and had to prescribe for, I did encounter perplexities when meeting the ailments of a chronic nature. Drug medication did not produce results that were satisfactory to the patients or to myself; the length of time required to cure this class of diseases was altogether too long; patients became dissatisfied and went to some other physician; while the money received for the time spent upon the patient and the work performed was not adequate, and I lost a patron whom I should have been able to retain.

How to overcome this trouble was a problem, and it was several years before I arrived at a solution that was satisfactory to me. Owing to there being such an endless list of people who suffer from chronic ailments, I put in most of my reading-hours on this subject, and I have continued on these lines during all the intervening years, and expect to continue doing so as long as I am in the doctoring-business.

The first line of study that I took up entirely outside of drugs was medical electricity. After getting acquainted with the fundamental principles, I invested in a galvanic and faradic electrical cabinet. Later, I added a static and a high-frequency machine. This opened a field of treatment that was productive of certain results that were satisfactory both to the patient and to myself, and enabled me to make more money than ever before. I saw the patient more often; the results of treatment could be depended upon; the patient felt that I was taking more interest in him than under the old-way of drug medication alone; the length of time required to complete a cure was shorter; and, more to the point, I took in more money, and, moreover, it was paid with feelings of gratitude.

Electricity has been of the greatest benefit to me in the treatment of gynecological diseases, especially leucorrhea, disorders of menstruation, and the nervous phenomena of women. When once a physician knows

how to use electrical currents in the treatment of disease, he can accept patients with a certain knowledge of what to expect.

In diseases of men, my best results have been from treating those of sexual disturbances; diseased prostate gland, old chronic cases of gonorrhea, strictures, gleet, and so forth. In cases where ulcers are found along the urethra, I generally make direct applications, through a urethroscope, of a mixture of equal parts of tincture of iodine and alcohol, and follow with semiweekly or weekly applications of echinacea, belladonna, and nucelin.

Chronic constipation and hemorrhoids were another bugbear to me, and I looked around for some better modes of treatment than I knew of. While much may be learned about these diseases from the ordinary textbooks, nevertheless, I did not derive from them any better practical knowledge than I already possessed, and the greater percentage of this class of patients will not give up and enter a hospital for operation until every other available means within their reach has been tried and found useless.

I kept on the lookout for some treatise that would prove of more benefit to me in the management of rectal diseases than any work I had yet found, and was finally rewarded by purchasing Albright's "Rectal Diseases: Diagnosis and Treatment by Ambulant Methods." This really started me on the right track and enabled me to do good work in rectal cases at the office and without much discomfort to the patient. Every general practitioner should have a copy of this book in his library. The same author has issued a companion volume, entitled "The General Practitioner as a Specialist," and that should occupy space on every doctor's bookshelf.

My next line of special study was in the fitting of glasses. This has broadened my knowledge of the human makeup, but it has also been a channel through which many dollars have reached my pocket that otherwise would have enriched the traveling optician or gone to an out-of-town oculist. Besides, I get acquainted with people, in doing this work, whom otherwise I might not meet at all, and in this way am paving the road for future patients. The cost of the necessary refraction equipment is so slight, when compared with the dollars received from doing the work, that no one should hesitate for a moment to take up the study. This will apply especially to those doctors living in country towns and villages.

While the three lines of study enumerated have been of great importance in assisting me to become more competent to treat my patrons satisfactorily and at the same time to earn more money, there have been several minor features in addition that are responsible in a greater or less degree for my present efficiency. These will be mentioned jointly, so as not to make this article of needless length.

I introduced better system in my everday work. This meant attention to regular office-hours; keeping appointments to the minute; promptness in responding to outside calls. When people could not or would not pay their bills, I simply told them to get another doctor. New patrons with whose financial rating I was not familiar were pointedly asked whether they were able to pay for the services, for, if they were not, I could not find it convenient to go and serve them. There may be a few doctors scattered over the country who do not care whether they receive pay for their services or not, but in all of my experience thus far I have yet to find one such person.

I made more careful and more systematic examinations of the people who came to me for medical advice and treatment. I keep a record of every patient that calls at the office and that I am called upon to attend on the outside. These records are kept in a small loose-leaf book, and, after making my notes at the bedside or in the office, I write them up at the earliest opportunity and have them on file for reference.

I became informed on the treatment of hernia by the injection-method; perfected my technic in adenoid and tonsillar operations; kept up on all minor surgical work and on such major operations as I might be called upon to do; procured a good microscope and all accessories; bought a complete urinary-analysis outfit, also one for chemical analysis of the stomach and bowel contents. I secured biologic specimens from any and everybody who came to the office or whom I was called upon to treat outside and made the examinations until I was thoroughly familiar with the technic of the different examinations, both chemical and microscopical. This has proved to be of great value to me in making correct diagnoses and in simplifying the treatment. A differential cell count in anemia is worth the price of a microscope; the treatment is resolved into accuracy, instead of guesswork.

Further, I purchased books that outlined the treatment of the foot and the removal

of hair and other facial blemishes. I supplied myself with all the equipment needed for giving hypodermics, the serums and bacterins, 606 and like remedies, and also for intravenous medication. This latter treatment is a wonder in selected cases and the results to the patient and the physician are simply marvelous.

I endeavor to improve my time, as years go by, in acquiring knowledge that will increase my status as a physician and public worker. I avoid all extreme positions on public questions, and before making statements before the public I study to talk directly to the point and in such a manner as to leave a desire with the hearers to want to listen to me again. I try to improve every opportunity that offers for increasing my business in legitimate ways. I treat my neighbor and competitor with fairness and courtesy, and expect, and demand, like treatment from him.

About half of the physicians whom I have met during the years that I have been in practice have been gentlemen. The other half have ranged, from out and out "stealers of cases" to the man who knocks you at every turn and has not the guts to come out in the open and meet you. Ethics, to them, is something to talk about, but alone for the other fellow to practice.

M. E. EASTMAN.

Weaverville, Calif.

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[Doctor Eastman's article is an admirable one, and we hope that it may be an inspiration to many of our readers. He has shown how any able man can prepare himself to do better work, and thereby enlarge his income. His paper should be read by every discouraged practitioner, again and again, until inspiration and determination take the place of the lethargy, carelessness and indifference which are the greatest foes to success. We have in hand several other papers upon this general topic, some of which we shall try to print next month.—ED.]

DOCTOR LAWRENCE'S ARTICLE ON CROUP AND IODIDE OF LIME

I have just read with interest Doctor Lawrence's article (December, 1914, p. 1061) on the treatment of croup. However, I wish to take exception to his statement that practically all works on therapeutics fail to mention the use of the iodide of lime in the treatment of this disease. My point is this: In his "Medical Practice," under "Catarrhal Laryngitis" (Spasmodic, or False, Croup), Ch. Gatchell, a Homeopath, names the first remedy "iodide of lime—the crude drug, not calcium iodide—in 1-4- to 1-2-grain doses," and asserts that it "will cut short the attack in almost all cases." Under "Pseudomembranous Laryngitis (True Croup)," the first remedy mentioned in the same book is antitoxin, and the second is iodide of lime, 1-2 grain every fifteen to thirty minutes, with the statement that "in some cases this will cure if given at the beginning of the attack."

I think this is interesting, in that it shows the readiness of a Homeopath to accept a drug for its physiological action when this seems the best remedy. It is especially interesting in that it comes from a man of Doctor Gatchell's standing, who, for instance, has held the positions of secretary of the American Institute of Homeopathy, of professor of theory and practice at the Hahnemann Medical College and Hospital, of Chicago, of editor of *The Medical Era*, besides others.

DON H. SILSBY.

Ann Arbor, Mich.

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[I have always found our Homeopathic brethren most receptive of new ideas—more so, I regret to say, than some of our own leaders.—ED.]

HOW ONE MAN SUCCEEDED

In reply to your request to "just write," I will give you my testimonial of what somebody did for a doctor. Nine years ago, I started out from college with a determination to make a success of the practice of medicine. I had an office-outfit and $200 in cash. I decided to go to the country for a few years, thinking that I should have a better chance to get business at once, and I selected a town of 2000 people where there were five doctors. I stuck out my shingle on the first of July. I stayed ten months and left $400 of unpaid bills. In those ten months I did business to the extent of $2250, and of this I collected $250. The remainder still is due me. By this time I decided that I was in the wrong town. After some effort, I collected $43 and moved to another town. This town was a little smaller than the one I quit, but the results were just as large. Third town ditto.

I then stored my equipment and went home to "visit" and to see if I could get into something that would make me a living. I was owing $1800 and had a book-account

of $5700, of which I have never collected a cent. On this home visit I dropped in to see the old storekeeper who had been in that town for forty years. He also is a good friend of mine. We had a long talk, and I told him my experience for the past four years. Said he: "Tom, you have had a heap of book learning and a right smart practice, but I reckon you don't know much about business. Now, Tom, I will make you a business proposition. You go over to Blanktown (a city of 25,000) and start in practice again. I will advance you $500 at the rate of $50 per month. If you make good, you pay me $1000, if you fail, you owe me nothing; however, you must follow the directions that I give you." Of course, I accepted his proposition.

The next day my friend and I started for this town from which I write. Within two hours we found a dentist who had an extra room. We rented it, with the use of his reception-room, for $11 per month, the rent to start the first of the following month. We next visited the business men's association, of which I at once became a member. I was supplied with a list of the "slowpay" and the "deadbeats" of which this town has the average quota. After seeing the editors of the two local papers, we drove back home for dinner, 20 miles. The meal finished, my friend looked over the credit list and said: "There are a heap of D. B.'s in that town, but you have done enough D. B. work for a while. Let's see what you can do for yourself. This list will be the guide-post to success."

And here are the instructions he gave me, which I have followed to the letter, since I had nothing to lose and everything to gain:

"When you get a call," the advice ran, "ask the name and address, retire a moment and look at the list. If the name is there as a D. B., return and tell the gentleman that you can make the visit for $2 cash. If he is one of those fellows who pay for the first service and never afterward, he will pay. Go and make the call; then, if you find that the case will require further calls, say, three, tell the man so, and that you will make the three calls for $5 cash now or for $2 cash each time you come. If he has not the money, take an order on the firm for whom he works. Hold this order over one payday, giving him a chance to pay you; if he does not, then collect the amount from the employer.

"If the man is one of those that never pay at all, he will get angry and give you a strong talk about his honesty. Tell him that he is on the list as a person who does not pay his bills and if he wants your services he will have to pay cash, but you will make a visit for $1.50 cash at each visit. If you do work for him, make him pay every time, else you will lose, not alone a bill, but a patient to boot. If he is listed as slow pay, go and do the work and present the bill at the end of the service, with the statement that you will give a 10-percent discount for cash today, and that you do not carry any account for more than thirty days. If he does not pay in thirty days, take a secured or a judgment note."

For the rest: "Buy only what you actually need. Do not buy on credit. Pay cash and get the discounts."

On the first of the month, I opened my office for business, and had a call on the first day. (On my first visit to this town I saw the newspaper editors and paid for the notices.) My first caller was at the very head of the deadbeat list. The fellow got mad and has not spoken to me since. My second caller also was on the list as a deadbeat, but I got out of him $4.50 cash for three visits. Next was a slowpay. From him, I got $8 cash for five visits. Next I got an order from a slowpay. Next was a case of gonorrhea: got $10 down and $5 each week until cured. Next was a confinement: got $15 cash. (Our regular fee is $25.)

All of my callers the first month, except one, were on the list as deadbeats or slowpays. I did business with 40 percent of them and took in $66.50 cash. Of the $50 I borrowed at the start, I had used $48, and that was the last money I borrowed. At the end of the fourth month, I paid my merchant friend for the $50 I borrowed and $10 for his trip over here the first day. I have never borrowed or bought on credit since that time, and have paid up the $1800 I owed when I came here. I keep an account of all business transactions, which, for 1914, was as follows Cash, $5567.50; balance, on books, $295; charity, $204. I never turn away any honest poor applicant, but the D. B. can get no credit here, therefore, he does not beat me

I am just an average doctor, probably not even up to the average, but I was no better doctor when I came here than I was in the town I last quit. I am still using the rooms with the dentist at $11 per month. This system of business has worked well with me, as also with several others whom I induced to try it. One doctor was about

ready to leave his present location, when I told him of my method. He at once adopted it, and now, after a year, he has a nice little bank-account. I do not speculate with my money; am not in the market for gold-bricks, mining stock, Mexican rubber plantations or city lots in the middle of the Everglades. I consider my best investments are loans on improved real estate here at home.

As to doctors being poor business men, I have noticed that those who were in a commercial line before they took up medicine are the most successful. I have seen too many old doctors "carted over the hill" for me to carry my reserve fund in the pocket of a benevolent public. You know why you dropped the pill and grabbed a quill. The time to catch shad is, when they are running.

A. D. Q.

Michigan.

WARTS AND CORNS. "FRESH BLOOD"

On page 1049 of CLINICAL MEDICINE you ask for "fresh blood." Well, I am not going to send you any of mine; instead, I wish to call the attention of your readers to a very simple, though perhaps harsh treatment of certain conditions that I just stumbled upon recently.

A lady somewhat in years had an excrescence or warty growth appearing upon the inside of her hand, between the thumb and first finger. It was about an inch in diameter, was getting very painful and interfered with her household duties. She applied to me for something to remove it.

I gave her a small quantity of fuming nitric acid, and a powder consisting of equal parts of magnesia and bicarbonate of sodium. I advised applying a very small amount of the acid daily, by going over the growth with the cork wet with the acid, then to dust on the powder; the latter to neutralize any excess of acid. In about a week the wart was entirely gone and the skin is as soft and smooth as it ever was.

Another patient, a young lady, had two or three corns upon her feet, so large and painful that it made life very uncomfortable for her. She was induced to try the same treatment and after a few applications her corns were entirely removed.

Now, I know this is a very little thing to report, but many of us are baffled by just those little things and are at a loss as to what to do. I hope this procedure will be tried by others of the "family" of CLINICAL MEDICINE.

J. H. BOWEN.

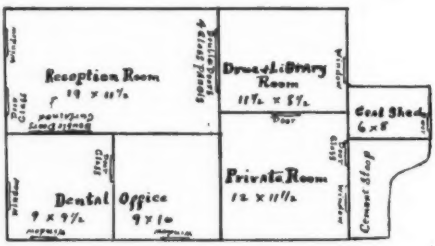
Elba, N. Y.

THE PHYSICIAN'S OFFICE

Your article entitled "Reception Room and Office," in the November CLINIC, page 887, was read with considerable interest, for it contained several good suggestions that doctors would do well to heed.

I myself have given this subject considerable thought during the past year and have worked out a "scheme" that to me has proven quite satisfactory, in fact, has solved the office-problem for me. To many a doctor, the question about the office actually is a problem, and we all have to solve it in one way or another. What would suit one perhaps would not suit another.

After climbing stairs for thirteen years and putting up with other inconveniences, I finally decided to buy or to build. I found a small building half a block from the main



Plan of Doctor Bishop's Office

corner, which, I thought, by some remodeling and repairing could be fitted up for a combined doctor's and dentist's office. So, after securing the promise of the resident dentist to take offices with me, I purchased this building and put it into excellent condition at a total expense of about $850.00.

I enclose a rough diagram, which will give a fairly accurate idea of the arrangement of the rooms. We divide the expense of heat, light, telephone, and the like. A conservative estimate of the saving by the dentist over what it formerly cost him is $70.00, and he now has better quarters. I myself also have a better office. Altogether, if the rent that I formerly paid is figured in, the investment pays "big." Besides, there is the added advantage of someone nearly always being at the office to answer calls, one for the other.

I think there are many doctors and dentists in small places who could use this "scheme" to their mutual advantage. As for the equipment, we had enough furniture between us to fit the office-rooms up very nicely. We covered the floors completely with linoleum, which makes it comparatively easy to keep them clean. There are no pictures on the walls of the reception-room—only a large mirror. We have a good-sized table for papers and periodicals and a small one for the lamp, two large easy chairs, and four good common chairs; also a cloak-and-hat rack. On one side of my medicine-room I have glass cases for my drugs and sundries and a table supporting shelves for my books. I have my diploma and certificate on the walls of this room, but no pictures. In the private room, besides my operating-table, I have a table that I use as a washstand and another on which I keep various articles for which I have frequent use. No pictures here. A large stove in the waiting-, or reception-room, and a small one in my private room heat the apartments.

If you think this will prove of benefit to your readers, you are welcome to publish it.

A. H. BISHOP.

West Bend, Ia.

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[We have several more of these articles on hand for publication next month. I think you will all agree with me that these stories of actual experience are just what we all need. It is easy enough to paint glowing pictures of what the doctor *should* do; but it's quite a different thing to actually *show* us. What has the next man to suggest?—ED.]

SHALL THE PHYSICIAN BE COMPELLED TO INFORM HIS PATIENTS AS TO THE IDENTITY OF MEDICINES DISPENSED?

In the last number of CLINICAL MEDICINE (see page 7, January issue), we asked our readers to give us their attitude toward the passage of laws which would require every physician dispensing medicine in person to write a prescription for this medicine, said prescription to be placed in the hands of his patient. The same request for comments upon legislation of this kind was made in a personal letter addressed to a number of prominent physicians in different portions of the country, representing different schools of practice, and including medical editors, officers of medical societies, health-officials, and well-known practitioners of wide experience. As previously explained, this request for an expression of opinion was suggested to us by a gentleman who is very prominent in pharmaceutical circles, and who is anxious to sound the feeling of the medical profession without himself being drawn into the discussion.

We have been surprised at the multitude of responses. Judging by the number and the heat of the replies, the issue is a live one. In truth, we have received so many letters that it will be possible for us to print only a portion of them, while we are obliged to cut down the length of quite a number on account of the limitation of available space, as well as to eliminate matter which seemed to us rather too bitter or irrelevant.

It was not, and is not, our purpose to "start something" on the dispensing-question. As we have so frequently said in these pages, the answer to the query, shall I dispense or prescribe? is one that every practitioner must work out for himself. There are many factors to be considered by the doctor, but the paramount one is the interest of his patients. If this interest can best be served in his community, and with his clientele, by prescribing, then his duty is plain; and, if he can give better service by dispensing his own remedies, then no outside factor should deter him from so doing. But, he himself must be the judge, and certainly the last person to dictate to him his method of practice is one who would gain or lose financially through that decision.

We have been particularly anxious that the question proposed for discussion here should be dealt with on its merits alone, and absolutely without expressions of unfriendliness toward our friends of the pharmaceutical profession. We have been glad to feel that a friendlier feeling was growing up between druggists and doctors, and we have helped this feeling along as best we could without sacrificing what we believed to be our duty toward the medical profession. The physician has rights which should be conserved, and, with others, we have been and are willing to fight to the limit of our strength for the preservation of those rights. We have no ulterior motives as regards the druggists, and we are utterly opposed to any attempt on the part of the medical profession to make legislative trouble for the druggist. So far as we know, there is no such effort, and there should be none.

Attempts to injure others, like chickens, "come home to roost." Therefore, it is

peculiarly to be deplored that there is a certain element in the pharmaceutical profession which is vociferously and persistently demanding that "something shall be done to the dispensing doctor." Few flies are caught with vinegar and few friends are made by threats and abuse. Talk of this kind is doing harm to both professions. Therefore, we say plainly to these men: "You are on the wrong track; it will not pay you to follow it."

There is no good reason why all good doctors and all good druggists should not be on friendly terms. There are the best of reasons for cultivating a more friendly relationship between the two professions, one in which each shall recognize the difficulties of the other and leave each to work out its own problems.

Medicine is going through a transition period, and such periods are times of trial. Much, however, has been accomplished. The educational advance has been tremendous; there is a general cleaning up all along the line; and, what is of most importance, there is a great ethical awakening. Pharmacy's problems thus far have been more largely economic; but the ethical and educational issues are likely to require much more attention within the next few years. If she gives these problems the attention they deserve, she will have little time or occasion to undertake the reform of the medical profession.

In a recent address before the St. Louis College of Pharmacy, Professor James H. Beal pointed out the dangers of the present excess of zeal for legislation as a panacea for every ill. Read the editorial upon this subject in this issue of CLINICAL MEDICINE. We want to quote at this place from an address which Professor Beal delivered June last before the North Carolina Pharmaceutical Association:

"The wrong use or misuse of a drug is always more widely advertised than its proper and lawful use. The countless thousands of cases where drugs are properly and beneficially employed are never heard of, while the comparatively few cases of misuse are heralded far and wide, until the reading public is led to believe that such misuses are of constant and regular occurrence; a situation which affords the savior-of-the-race-by-legislation reformer the opportunity he most delights in, and serves as the excuse for the composition of bills which would either totally prohibit the sale of useful drugs or else impose such restrictions upon their sale as to amount in fact, if not in name, to practical prohibition."

Substitute in the preceding the word "dispensing" for the word "sale," and the significance of the proposed legislation under discussion becomes apparent. In another place Professor Beal says:

"It is undeniable that a certain percentage both of doctors and druggists have been interested in the illegitimate traffic in habit-forming narcotic drugs, but it is monstrously unjust to charge either doctors or druggists with general participation in such traffic. It is only the exceptional physician who is careless in the prescribing or dispensing of these drugs, and only the exceptional pharmacist who desires or encourages the patronage of habitués."

And finally:

"We are piling statute upon statute, adding bureau to bureau, and official to official, until the liberty of individual action and the responsibility of the citizen are becoming obscured in a maze of artificial duties and scheduled prohibitions. For morals, we are beginning to substitute the provisions of statute law; and for the dictates of conscience the artificial rulings of some bureau official. The American people have become possessed of a perfect fury for legislating. No matter what the difficulty, whether of a particular class or of the body politic, whether economic, social or moral, whether the temporary difficulties arising from the changing forms of industry or commerce, or the permanent difficulties due to the inherent qualities of human nature, the first and almost the only thought is, to appeal to the law-making bodies for relief."

It is interesting to note how many of the contributors to the symposium which follows take exactly the position so clearly set forth by Professor Beal.

Our final admonition is, to watch the legislatures. To be prepared for the introduction of bills unfavorably affecting the interests of the medical profession is the best insurance against economic and financial disaster from this source. If the profession is awake it is safe; if it is asleep, then anything may happen. Keep awake!

Is There an Ulterior Motive?

To the Editor: Replying to your query with regard to the enactment of bills designed to compel physicians to inform their patients concerning their remedies, I wish to say that it seems incredible that any law-maker would for a moment consider such a proposition. There are a few patients who are intelligent, to whom no harm would come,

but the ignorant, the hysterical, and inquisitive ones could not possibly be benefited; rather, more or less harm would be done by such information, in a great majority of these cases.

It, further, seems incredible that law-makers can be made to believe that so much legislation concerning the administration of remedies to patients is necessary. It is very doubtful whether anything but harm can come from so much legislation. It should be plain to these men, especially if they are experienced, that there must be some ulterior reason why individuals are so anxious for legislation of this kind.

FINLEY ELLINGWOOD,
Editor, *Ellingwood's Therapeutist.*

Chicago, Ill.

It Would Be Distinctly Unwise

To the Editor: I think any legislation whereby a physician is required to inform a patient as to the nature of medication he is receiving is distinctly unwise. Some patients can be aware of the line of treatment a physician is following without any detriment to him, but it would be distinctly harmful to those of the neurotic type to have any idea as to the therapeutic measures in use in their case. The laity have certain definite ideas about certain definite drugs which are widely at variance with the facts, but they possess these ideas, nevertheless, and, if, in many instances, the physician were to prescribe a particular remedy concerning which a given patient had some mistaken impression, it would be difficult to make that person realize that this particular agent was indicated in his condition. The intelligent layman is quite content to place his case in the hands of the intelligent physician, and to allow a medical man to treat him as his judgment dictates.

I can see no occasion for any interference with the physician's prerogative in the matter of dispensing or writing prescriptions. Such meddling is entirely unwarranted and will only result in trouble to the patient. There is altogether too much "reform" in the air at the present time. If our legislatures would put no new laws upon the statute-books for a few years, but insist upon better observance of those laws we now have, the country at large would be better off. People who live by the Golden Rule have very little to worry over so far as the practice of medicine, pharmacy or any other vocation is concerned.

H. S. BAKETEL,
Editor, *The Medical Times.*

New York, N. Y.

Is It an Intimation of Incompetence?

To the Editor: Your request for opinions as to dispensing physicians issuing prescriptions to patients whom they serve is, I take it, to get the opinions of the profession in their own language, and not that you have any doubt as to what it would be.

The laity knows nothing about a prescription and cares nothing about it; if, however, they had it, they might be tempted to take it to the drug store to have it refilled or imitated. For that reason, doctors should not write prescriptions. I always keep copies of important prescriptions, for reference. To me, the effort in question is a strong intimation that the medical men, as a class, are incompetent; but, then, neither of the two professions should make such an accusation against the other, lest they forget their own shortcomings.

However, it would be a good idea to conduct a department of pharmacy in the A. J. C. M. Also, the medical profession should insist that pharmacists qualify before being allowed to prescribe, whether it be "Bull's Balsam for Bad Babies," or anything else.

J. E. GRAY.

Butler, Ohio.

Let the Doctors Keep the Record—Not the Patients

To the Editor: Any law calculated to force practitioners to give a prescription with any medicine given a patient, in the interest of druggists, is to the disadvantage of the public and the physician. I am teetotally against any legislation which will in any way interfere with the doctor's prerogative to furnish anything he finds his patients need for the relief of their suffering and to effect a cure. I wish right here to thank THE CLINIC for the assistance it has rendered the profession and to urge it to continue this good work.

Every doctor should keep a record of what he dispenses to his patients, whether it be on history-blanks or in a prescription-book, for his own benefit, so that when his patients return he will know what medicine he has given them. In no case, and under no circumstances, should the patient be given a prescription in addition to the medicines.

I have been practicing and dispensing for almost eight years, and have been asked only twice for a prescription, and that was for whisky. I told them, since they had made their own diagnosis and selected the remedy, it was up to them to secure it in any way they could, as I was my own judge as to what I dispensed or prescribed.

I have talked the situation over with several of my patients and not one of them thought it would do to stop the doctors dispensing, as that practice is more satisfactory to them.

I have had patients tell me they could not take certain drugs; but I gave them the very thing, without their knowing it, and I secured the expected results. Had I given them a prescription along with the medicine, they surely would not have taken it. It would not do to give a patient a prescription along with codeine or morphine, as it is always best that people do not know that they are taking those drugs.

C. O. NELMS.

Herscher, Ill.

Would Discommode the Country Doctor

To the Editor: I am bitterly opposed to any and all legislation that antagonizes the dispensing of medicine by the physician, as I feel that it would discommode the people of the rural district in which I am a practitioner.

S. W. THOMAS.

Lacona, Ia.

Would Not Safeguard Patient's Interests

To the Editor: In our town, most of the physicians write prescriptions in the office, but in the country we dispense. I personally keep on file a prescription covering all medicines I compound for my patients. Quite a larger percentage of the perscriptions taken to the various drugstores are compounded by unlicensed clerks. It would seem that a physician who has the burden of his patient's recovery at heart would not go far wrong

in preparing such mixtures as they might need, and should be hampered in his care of such patients just as little as possible.

A copy of these prescriptions left in a patient's hands could in on way safeguard his interests, and might be productive of harm. It would favor passing prescriptions along. Most people do best when they are ignorant of the nature of the medicine they take.

C. W. ROMINGER.

Waukon, Ia.

Too Many Laws to Regulate the Medical Profession

To the Editor: As to my opinion with regard to a law, requiring physicians to hand patients prescriptions for medicines dispensed, I will say that I am opposed to any such law. In fact, I am opposed to the multiplication of laws for the regulation of the medical profession.

W. B. HAGER.

Nashville, Tenn.

Shelve the Class Legislation

To the Editor: Recently I encountered a professional man of considerable note who is extensively using the emetine treatment for pyorrhæa alveolaris, and he is charging his patients $10.00 "for material," besides a very large fee for "services." It is this sort of thing which is creating a demand that physicians acquaint their patients with the drugs they personally use.

Not long ago a poor patient complained to me that a distinguished oculist in another city demanded $15.00 to replace the broken lenses in a pair of spectacles he had not long before supplied at a very high price. But a letter brought the prescription from the oculist, and the new lenses cost fifty cents. This patient now patronizes an optometrist, who, incidentally, is active in the fight to get a state board for the optometrists.

The medical profession has itself very largely to blame for legislation aimed against it. Someone, when being offended, said: "No gentleman would insult me, and no other man can." And the medical profession assumed that no scientist would hurt it, and that no other man can. So, the profession, meaning all right but having no political vision at all, secured its own snug little legislation, forgetting that the "other man" could, and would, play at the team game. And the "other man" has been playing it to such purpose that it is now a fight to the finish or a compromise. If a fight to a finish, the man who knows how best to play politics will win. Needless to say, that will *not* be the physician.

The unfortunate fact faces us that we struck the first blow. We may just as well admit it, for we did. And we are in for a licking that we deserve. If modern medicine cannot sustain itself on its merits, without everlastingly rushing to the protection of class legislation under another name, then there is something wrong with modern medicine.

Just so long as a certain class of physicians are hissing the law upon the pharmacist, just that long will the pharmacist get back in kind.

I may be pessimistic, but my text in this matter is this, if I may paraphrase a bit: Agree with thine adversary quickly, whilst thou art in the way with him; lest at any time the adversary deliver thee to the legislature, and the legislature deliver thee to the politician, and thou be made a lawbreaker; and thou shalt by no means escape until thou hast paid some board the uttermost farthing.

Practically, then, as I view it, the leading medical men and pharmacists should get together and shelve permanently all manner of legislation and proposed legislation aimed at each other. The public will not object, for they have no interest or care in the matter, since they know very well that practically none of this class legislation protects the public interest.

THOMAS S. BLAIR,
Editor, *The Medical Council.*

Philadelphia, Pa.

Every Physician Should Fight

To the Editor: In the January number you ask for the opinion of physicians concerning a proposed law requiring doctors who dispense to leave with patients the prescription of the drugs given him. As for myself, I consider that it is one more attempt to saddle the physician with an additional hardship for the benefit of the pharmacist. Every physician should fight this bill to the last ditch.

S. W. SAUNDERS.

La Plata, Mo.

If Needed, Let Physicians Draft the Laws

To the Editor: That there should be stringent laws regulating the sale of the various narcotics and habit-forming drugs. no one will deny; but such a law should not be made without all due consideration of the true needs of the people.

While personally I dispense very few drugs, it has always seemed to me the height of folly to license a man to practice medicine and then take from him his armamentarium.

Before framing a law, either state or national, it would be wise to ascertain the necessity for such a law as contemplated and who would be benefited through its enactment. This would also include ascertaining who are the violators of the code.

Such a law as you refer to presumes that physicians are both incompetent and culpable, and that many addictions are attributable to the dispensing by physicians. This, I believe, is not correct. The accommodating and meddling laity and the obliging druggist have made more drug-slaves than all other agencies.

While such laws, if enacted, in conjunction with a law, equally stringent, regulating the sale of narcotics by druggists, would prevent many of the drug-addictions, such legislation at the same time would work an extreme hardship on many invalids actually suffering, and lives actually would be lost in consequence of such stringent regulations.

To place in the hands of the masses prescriptions calling for morphine tablets, will produce more morphine users than will any other methods. If it is necessary for a patient to have morphine, it is far better for that patient to be given the drug in ignorance of its name. What benefit may a patient derive from knowing the drug he is taking, when he knows nothing whatever of its therapeutic values? Many times it is distinctly advantageous for the patient not to know what he is taking or what results we expect to derive from the use of a drug.

The contemplated bills include the prescribing or dispensing of all drugs, but there can be but little argument concerning any, except the habit-

producing narcotics and other highly poisonous drugs.

When a bill of this sort is drafted, it really would seem logical that the medical men should construct it. Moreover, that it should not be the work of one man nor of one group of men, but should be what the profession as a whole thinks best.

Such a symposium as you propose publishing will aid greatly in determining whether or not a bill, such as is contemplated, is a necessity, or whether it is for the benefit of a special class.

CLYDE D. PENCE,
Editor, *Illinois State Medical Journal.*

Chicago, Ill.

A Homeopathic Objection

To the Editor: The editor of *The North American* has been requested to contribute to a symposium, to appear in THE AMERICAN JOURNAL OF CLINICAL MEDICINE, dealing with the advisability of compelling a physician to give to his patients the names of the drugs he is dispensing to them; there being presumptive evidence that bills to this effect are to be introduced at the instance of the druggists' associations in a number of legislatures.

Legislation of this nature evidently would be aimed at physicians who do their own dispensing, so that the discussion of this question is eminently appropriate, not alone in these columns, but in *The North American Journal of Homeopathy* as well—which will be done in its next issue.

There is not a homeopathic physician who will not oppose such legislation, if it is brought to his attention. The great majority of the medicines dispensed by homeopathic physicians are of such a character as to render them not dangerous to the life or health of any person accidentally misusing them; so that there is no call for a safeguard of this character on this account. We are confident that homeopathic physicians having occasion to dispense medicines that did not conform to this rule have intelligence enough and take sufficient interest in the welfare of their patients to give such directions for the handling and use of the medicine as the case may call for.

On general principles, it might prove a very dangerous thing to acquaint a patient with the name of the drug being dispensed. The patient might be aware of its poisonous properties and might deliberately take an overdose; or, an overdose might be deliberately administered by a member of the household.

If anything can be gained by letting the patient know the name of the remedy prescribed, the physician can be trusted to impart the information. To give the name of the remedy to some patients, would be a suggestion to them to read up about that drug in some encyclopedia or other authority and thus perhaps cause them to apprehend that more is the matter with them than the physician says or even to question the appropriateness of the prescription.

Again, such a practice might lead to self-drugging. Knowing, for instance, that the last time he had "rheumatism" the doctor gave him rhus toxicodendron, the next time "rheumatism" strikes him or any member of the family, he is likely to send to the drugstore for rhus toxicodendron. This will always work to the profit of the druggist, but by no means always benefit the sufferer.

Granting, as we must, that the interests of the patient must be preeminent, we cannot see how they can be served in any way by such legislation as is suggested, and we have shown that they may be harmed thereby. *The North American* certainly will expect every legislative committee of every state homeopathic society to oppose strongly any such measure.

HILLS COLE,
Editor, *North American Journal of Homeopathy.*

New York, N. Y.

Better to Legislate Against "Patents"

To the Editor: I have received your letter of January 7th, requesting my opinion concerning the justifiability of legislation "to compel physicians to acquaint their patients with the name and character of all medicines which the doctor may personally administer or dispense, the physician being required to place this information in his patient's hands, by 'prescription' or otherwise."

I do not dispense, but my practice is, as you will see by the enclosed printed prescription head, to have a copy of the formula placed upon the package. I do this for my own protection against error on the part of the pharmacist, and also for my information or the information of a colleague who may be called in an emergency to treat my patient, in the absence of a case record.

This, however, is an individual practice, and there is no reason why it should be imposed by law upon those whose judgment is other than mine.

In certain cases, also, I hold myself at liberty to strike out from my prescription head the order to copy the formula on the label, for two reasons: First, that the patient may *not* be "acquainted with the names and characters of the drugs" contained in the prescription, and second, that it may not be renewed indefinitely by simply carrying the bottle to some other pharmacist than the one who originally compounded the medicine, and who therefore has not on file my original prescription, which states: "Do not renew."

Much harm results from indiscriminate and indefinite renewal of prescriptions, and from the advice of one patient to another to take this, that or the other medicine which "my doctor gave me." Patients who are likely to indulge in advice-giving or renewal should not know what they are getting; patients who are likely to contract a habit should not know when a habit-forming drug is prescribed; patients on whom an undesirable mental effect might be produced, also should not know what medicine they are receiving. It is a matter entirely for the discretion of the prescriber, and the law should not interfere. On the other hand, if a patient *demands* to know what medicine is given him, he is within his legal rights; and it is then "up to" the prescriber either to inform him, or frankly to decline to inform him, saying, "I think it best not to tell you," or words to that effect. The patient then has the option of accepting the physician's decision or of seeking some other medical adviser; and the physician is well rid of any patient who leaves him under such circumstances. The same principle applies, of course, when the physician dispenses.

Legislation, far more imperatively needed, is an act to compel "patent medicine" manufacturers to "acquaint purchasers with the names and character of the drugs contained" in their

products by printing a true and complete formula on the label of each package.

In the case of the physician the patient has to depend upon the skill and probity of the prescriber (or dispenser); and has a remedy at law in the case of malpractice. In the case of patent medicines he has no such dependence and no remedy.

In other words, there is an element of personal responsibility in the first instance; but none such in the latter instance. The law should interpose its safeguard where there is no personal responsibility—in the case of the patent medicine; its protection is not needed in the case of the physician.

S. Solis Cohen.

Philadelphia, Pa.

Look Out For the "Interest" Behind Class Legislation

To the Editor: You ask your subscribers for short, pointed opinions regarding the alleged desire of certain pharmaceutical journals and societies who wish "to protect (?) the people of this country" from "the carelessness or ignorance of the attending physician" who dispenses his own remedies, and aim to get laws passed which will require all such physicians to place prescriptions in the hands of their patients showing the remedies which they have given them.

However, it seems impossible to do this subject justice in a short letter. As a matter of fact, the efforts of the various interested corporations, professions, and individuals to pull the wool over the eyes of our legislative bodies and have them enact laws for their own special benefit, under the pretense of working for the interests of the common people, are becoming altogether too numerous and an actual threat to the general public.

I am one of those dispensing physicians, and I should like to know how a prescription in the hands of my patient is going to protect him from my carelessness or my ignorance, unless he takes it, along with the medicine I have given him, to one of our pharmacists and asks him whether the medicine furnished is the same as that which the prescription calls for or whether it is a substitute; whether it is what he needs for his ailment, or not; whether it is a poison that will kill him if he takes it or whether he had better throw it away and get some patent or proprietary medicine from the druggist in its stead. I should like to know whom the patient is likely to find more competent to pass judgment. as to what he needs, than the doctor, who has complied with all the laws which the legislators have passed to protect him from incompetents.

A prescription in the hands of a patient can do him no good whatever, unless he desires to get it filled by a druggist or some other doctor. However, a prescription kept on file by the doctor who dispenses his own remedies would be a convenience to the doctor himself and a benefit to the patient, in case it became desirable to recall what had previously been dispensed.

You certainly have struck the nail squarely on the head when you say: "The underlying reason is, undoubtedly, a desire on the part of the druggist to strike a body-blow at the dispensing doctors." Such a law, if enacted, would require every doctor, in every case of emergency, to leave prescriptions with every patient, telling him just what he had given him, even when he had to give hypodermics for the relief of pain, syncope, mania, or other acute condition.

Such a requirement would be disastrous to any community, instead of a benefit. In such instances, the doctor often would feel forced to lie about what he had done, to avoid being condemned by an incompetent jury of friends and neighbors, as well as being criticized by the druggists. Under such circumstances, the incompetent public would soon consider themselves more competent to judge what the patients should have or should not have than the attending physician. The result would be one hundred percent more malpractice suits than we now have, and doctors would soon become so disgusted and so harrassed that they would seek other vocations and let the people treat themselves, or let the druggist, the patent-medicine vendor, the Osteopath, the mental healer or magnetic healer, or for that matter, the legislature treat the sick. Such an insensate law would, indeed, be a body-blow to our profession.

I am aware that the same charge is often made against the medical profession, and, while no doubt there are some instances wherein the charge can be substantiated, we know that as a class there are no more self-sacrificing, well-meaning men, desirous of doing everything in their power to benefit society, than the members of the medical profession. However, if any more laws can be enacted, tending to drive us out of business under the pretense of "benefiting the public," some subtle lobbyist no doubt will get the ear of an ambitious, shallow-brained legislator and have the necessary bill drafted, and, watching for an opportunity when barely a quorum is present, will have it railroaded through.

The question of really benefiting the public is the last one thought of or the least considered in the enactment of many of our laws today. There is a subtle imp hiding under the cloak of "benefits to the public" in about nine cases out of every ten of the bills presented before our law-making bodies, which is nothing less than a selfish desire for financial gain on the part of somebody. Every legislator in our land should examine every bill and every amendment offered and see whether there isn't some diabolic personal interest back of the plausible arguments.

O. J. Ruth.

Colchester, Ill.

Such Knowledge Bad For Patients

To the Editor: Personally I consider it a bad thing for many patients to be familiar with the drugs they are taking. They get in the habit of reading the doctor's prescriptions and if he orders the same drug twice, or several times, they take exception to it, and sometimes lose confidence in his knowledge. Further, not a few patients—women, especially the young and unmarried ones ("old maids")—fuss over all their ailments, even the lightest, and become introspective and morbid, often about mere nothings. In the same class frequently are clergymen, and even nurses and doctors themselves. The latter class, however, very infrequently especially among general practitioners, who haven't the time or the desire to bother about their own bodies. Nobility obliges them to think of others' ills, and not their own—but, such are the heroes of the world, as I believe.

Again, many of the new drugs, often very injurious, are put into prescriptions simply because the doctor gets a reputation in this way for wisdom

among the foolish, increases his clientele thereby, and gives a sop to his conscience, if he has one.

The answer of such a man to the query, "Why did you prescribe a drug of which you know very little practically and when you know another, time-honored, which would be useful, or at least not harmful?" probably would be, because it is the way of success.

Alas, the pity of it! I claim that, in general, it is preferable for the doctor to write no prescriptions which can be read by the patient and by some peddled about among their friends. In confidence, the physician has the greatest bulwark in practice, and, if the patient has not this confidence in his physician, the sooner he goes to another the better for him and the doctor.

When all is said, it finally comes to a question of character and knowledge. If the physician's integrity is beyond cavil, if his education, opportunity, and experience are what they should be, then, and then only, should he succeed and win both friends and patients, at the same time. If the doctor be a knave, a pretender, an ignoramus, what not, it doesn't matter a great deal how one legislates or tries, fraud always will triumph for a little while; that is, make filthy lucre and secure temporary plaudits from the crowd of gulled ones.

BEVERLEY ROBINSON.

New York, N. Y.

It Would Foster Self-Medication

To the Editor: In reply to your inquiry, I wish to state it as my opinion, that, to demand that the physician give to the patient information about all the ingredients of the medicines he is giving him, would be a most pernicious piece of legislation.

You know very well that, as a rule, I am opposed to secrecy, but there are thousands of instances where it is best for the patient not to know just exactly what he is taking. A little knowledge is a dangerous thing, and numerous patients have peculiar ideas about certain drugs, knowledge derived from the reading of unscientific or quack literature, and with this half-baked knowledge they would either refuse to take certain drugs that are distinctly indicated in their cases, or even, if taking them, they might fail to be benefited by them, because they would take them reluctantly and in fear. It occasionally happens that a patient had taken a drug by which he was harmed; he then gets a prejudice against that drug and refuses to take it in conditions where it is absolutely necessary that he should take it.

We somethimes have patients come to us and tell us: I want you to treat me for this and this trouble, but you must not give me this and that drug. When a doctor is independent, as I am, he simply tells the patient: "You will take just what I am going to give you, if you want to be treated by me. I am the sole judge of what is good or bad for you, and I can treat you only on the condition that you put yourself entirely in my hands." But some doctors cannot afford to be so independent with their patients, and they either must avoid administering medicine which in their opinion would be beneficial, or else they must administer the drug disguisedly, stealthily.

Then, again, forcing the physician to disclose to the patient the nature of every ingredient he is taking would be the *best means for fostering self-medication.*

All in all, such legislation would be pernicious and a step in the wrong direction.

I believe in frankness and openness between patient and physician, but the physician's hands must not be tied. He must not be forced to do things which in his judgment are best not done. Just as in many cases we, for the good of the patient himself, are obliged to conceal his true condition and diagnose his case as something less serious than it really is, so there are conditions in which it is better for the patient not to know just exactly what he is taking.

Anyway, the patient's knowledge of the ingredients of his medicine is of little value, because all he would know about it is the name. As to the real physiological effect, he would be absolutely in the dark, and by looking up some popular works on medicine he would derive perverted, half-baked knowledge. About medicine, it certainly is true that a little knowledge is a dangerous thing, and often worse than no knowledge at all.

WILLIAM J. ROBINSON,
Editor, *The Critic and Guide.*

New York, N. Y.

Should Be Killed on Sight

To the Editor: "Shall physicians be compelled by law to acquaint their patients with the name and character of all medicines which the doctor may personally administer or dispense?"

There is no objection to telling some member of the patient's family the name and character of any remedy utilized in the care of the sick; however, anyone versed in the principles of psychology would recognize at once the unwisdom of making this announcement in routine fashion to the patient.

If the proposed bill emanates directly or indirectly from drug organizations and their journals, immediately there arises the suspicion that it is a trade-measure. Undoubtedly there are physicians who are inexcusably ignorant of pharmacology. But there are just as many unscrupulous druggists and drug-clerks who do not hesitate to substitute, or to give snapshot prescriptions, with equally mischievous results.

If the ultimate purpose of the legislation is, to limit by law the physician's right to dispense his own remedies, the legislation should be killed on sight. Such legislation is taking from the physician an important responsibility—that he take more than ordinary precaution to supply pure drugs in safe form.

SARAH M. HOBSON,
Secretary, American Institute of Homeopathy.

Chicago, Ill.

We have received many more letters which we lack the space to reproduce. In the main they repeat the arguments presented herewith. In this connection we wish to refer to a letter received from Dr. C. F. Taylor, editor of *The Medical World,* who refers to the fight he is putting up in behalf of the dispensing doctor as to his position on the subject under discussion here. Every doctor should be reading the *World* during these strenuous days.

There is one point that seems to have been overlooked, in the main, in this symposium.

The main reason given by the druggists for advocating legislation of the character under discussion is that there may be actual danger to the dispensing doctor's patients because of the absence of any *check* (such as it is asserted that the prescription on file at the drugstore affords) against the incapacity, carelessness or criminality of the physician when he dispenses his own remedies; they also allege that dispensing doctors are prone to purchase cheap drugs, through cupidity or ignorance, and that there is no *check* against the quality of these drugs, such as the pharmacist is supposed to afford. The charge has also been repeatedly made that dispensing doctors are generally "cheap" doctors, and, hence, need "checking."

These charges are readily answered, and, to us, seem unworthy of a great and useful profession like that of pharmacy. Better relations between doctors and druggists can only be brought about by mutual confidence on the basis of better *service*. We agree fully with Doctor Blair, that "the leading medical men and pharmacists should get together and shelve permanently all manner of legislation and proposed legislation aimed at each other." Also, those "leading" men should know and interpret the feeling of the mass.

We have devoted a good deal of space to this discussion. Does it deserve it? We leave the decision to our readers.

FIELD NOTES FROM ONTARIO

I find a great many useful, practical suggestions in CLINICAL MEDICINE, many of which I have applied in my practice with satisfying results. *Our* journal is certainly full of good things, and I read it from cover to cover every month. I particularly like the short, breezy articles embodying the experience of the busy doctor. Having been helped, I want to give help, so here are a few points which have been useful to me and may be useful to some of my brethren:

Chilblains.—I saw the statement made some time ago that a saturated solution of zinc acetate in water, applied to the affected parts three times daily, would give relief. I tried it, and the result was immediate benefit following a single application and quick cure after a few days' use. Subsequent experience equally favorable. To me this seems another specific; therefore, I say: Forget everything else and use it. It is simple. It works.

Obstinate Constipation.—On page 1025 of the November, 1914, number of CLINICAL MEDICINE, Dr. Robert Gray recommends injecting into the rectum a mixture of glycerine and water (2 drams each). A common male glass urethral syringe is used. I use this quantity for young and old, and have found it a much more convenient method of emptying the bowels quickly than by the enema of soap and water.

In severe cases of obstinate constipation, with fecal impaction, I have injected a quart of common coal-oil (kerosene)—the kind commonly used in lamps. This has never failed to produce results. In one case it took an hour and seven minutes to get the quart of oil into the bowel—but it did the work.

H-M-C.—This is a boon to the suffering, as well as a great help to the doctor, and I find it to do everything claimed for it. I no longer think of giving morphine alone when some remedy for the relief of pain is required. H-M-C is the best remedy available. Also, it is certainly good in obstetrical practice.

Keep on with your good work, ye editors, and may you be spared for a goodly number of years yet to continue the work you are doing to help the busy doctor and suffering humanity.

M. G. RIGLEY.

Peterboro, Ontario, Can.

A PERSONAL EXPERIENCE WITH EMETINE IN PYORRHEA

Emetine hydrochloride—there is nothing like it in pyorrhea, and it does not take weeks or months for it to make you believe in its efficiency. I am now using it on myself, and after the third day the soreness disappeared from my gums like clouds on a summer day. Now, the surprise was not only in the clearing up of the pyorrhea, but that at the same time my rheumatic pains left as though I had taken opium—less the slumber, except nights, which reminded me of my childhood days, for my sleep at last was peaceful and restful. I have not arisen in the morning feeling completely rested in twenty years until now, since beginning to take this remedy.

All my life I have had a chronic laryngitis, and when it began to cloud up for rain I would begin to cough and have aches. For the past three weeks, it has been raining most of the time, but I have been free from my former experiences of aching and coughing. I cough some, but it does not keep me up at night, as formerly.

When attending the New Orleans Polyclinic, I was taught that an acute attack of tonsillitis was a premonition of an attack of rheumatism. Can it be due to amebas? Let us try emetine as a specific in tonsillitis. Most rheumatics I see have pyorrhea, but not all persons having pyorrhea are rheumatics. They may be in some initial state, therefore let us give emetine a trial in some or all of our cases of chronic *aches*.

A. L. NASON.

Maben, Miss.

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[Doctor Nason is becoming an emetine enthusiast. Early in January (since writing the preceding) he wrote us: "Recently I was called to help do a curettage on a young woman whose menstrual period had lasted two weeks, with alarming loss of blood. With the consent of her physician, I determined to try emetine hydrochloride. I gave her 1-2 grain of the alkaloid, and by the next morning the bleeding had stopped entirely. Two days have since passed without recurrence. All medical measures to arrest the hemorrhage had been tried and failed, and the curettage and packing had been decided upon as the only means of relief remaining. The emetine prevented a serious genital operation, one especially repugnant to a young unmarried woman." Experiences like this are mighty interesting. —ED.]

PHYSICIANS SHOULD USE MORE LOBELIA

I have been an interested reader of the articles appearing in CLINICAL MEDICINE regarding lobelia and lobeline. I have read the journal for years, and I have used lobelia much longer than I have read the journal, and as Doctor Ellingwood says, I have often been surprised that so few physicians have availed themselves of the help this agent can give them.

The medicinal use of lobelia dates from 1791. At first it was employed in a very crude manner, being made into an infusion only. From that date to the present time its preparations have been perfected and its field of usefulness greatly enlarged.

Lobelia is a pure relaxant to the nervous, serous, mucous, and muscular structures. It influences the glandular system, fauces, and respiratory passages. It increases the flow of saliva, and in large doses is nauseating and even emetic. It is one of the greatest equalizers of the circulation, and in small doses, oft repeated, the entire system can be brought under its influence without nausea following. The circulation is improved, the skin, liver, kidneys, and bowels respond with increased activity, and the patient feels greatly relieved.

Lobelia is of great service in croup, bronchitis, pleuritis, nephritis, otitis, ophthalmia, and rheumatism. In contagious diseases, it may be used to bring out a tardy eruption. Long before the day of antitoxin it was depended upon by those who knew its value in diphtheria and croup. In dislocations with rigidity of the muscles, given in small repeated doses, it soon relieves the difficulty. Locally, it is of great value in abscesses, pleurisy, pneumonia, erysipelas, and indeed in any condition where a relaxant is needed. Some forms of asthma yield readily to it. In strangulated hernia, rigid os uteri, and tetanus it has no equal.

However, never use lobelia in nervous prostration, paralysis, gangrene or shock, except possibly in the last, and then with strong stimulation. During the twenty years I have employed the drug I have gradually widened its field of application, as a trial or a suggestion gave me new ideas.

I have treated a great many cases of pneumonia, and it has been my good fortune never to lose a case; the treatment was largely with some form of this drug. In delirium tremens its value should not be overlooked and the patient have the best treatment there is for his folly. It will put patients with delirium tremens to sleep, although it may take one, two, or three drams of the eclectic preparation, given at half- to one-hour intervals. I have even given four drams, at thirty-minute intervals, and the patient has awakened the following morning, taken light nourishment, had one or two more hypodermic injections, and gone to sleep again. Twenty-four hours of this treatment produces a sober, sane patient, with little trouble, and he is usually very grateful for the relief.

This brings me to my present mode of administering the drug. I have used with satisfaction many ounces of Lloyd's subculoid, as well as other forms. Lobeline and lobeloid, being more concentrated, provide very handy preparations, and one gets the same results as from the other forms.

The old fear of lobelia, when it was classed as a narcotic, I think caused many physicians to pass it by, the profound relaxation leading many to accept the narcotic theory. If its action is well understood there need be

no fear, even in the socalled "stage of alarm," as either time or a stimulant will restore the patient to normal, and as soon as the relaxation has passed, he will tell you he feels better than before.

Its most ardent supporters have much to learn as to its applications, and those who have not used it at all, or little, can win laurels and dollars by its employment in proper cases. This is strong praise to give a single remedy, but its merits are many, and its faults few, if the drug is handled properly.

E. E. Bailey.

Spokane, Wash.

LICE THE PLAGUE OF THE ARMIES IN THE FIELD

To my little article on this subject published in the November issue of The American Journal of Clinical Medicine I desire to add an extract from a letter of Professor A. Loewy, which was written in the field and appeared in *Berliner Klin. Wochenschrift*, 1914, No. 43:

"Besides the cold temperature, our warriors, especially here in the Eastern Army, complain of another evil, namely the lice plague. Thus far, no remedy against it has been known which is effective. It has been said that wearing silk underwear was prophylactic; if silk merits this reputation only a small part of the army can avail itself." Doctor Loewy learned from an old soldier, whom he knew for tens of years as being a trustworthy man, that impregnation of the garments with asafoetida gum would keep vermin away as long as the odor of the drug lasted. Doctor Loewy, however, does not say that he himself has given this remedy a trial.

A. Rose.

New York City.

[Perhaps some reader of Clinical Medicine has a sure cure for lice. Any offerings? Be sure to read the article upon typhus, on page 62 of the January issue.—Ed.]

GELSEMININE AS AN ANODYNE

Recently, while calling on a patient, I found his wife in great pain from an attack of dental neuralgia. The cause was a plate that had worn the enamel from her teeth and the fact that only a dentist could give her relief seemed so obvious that she had not called for medical relief. Domestic affairs were in such shape that this had to be postponed, and, merely to "give her something," I told her to take gelseminine hydrochloride, 1-250 grain, every two hours to the point of physiological effect. To our mutual surprise this treatment eased her pain so that not only could she sleep, but also could tolerate the pain until it had worn off entirely. She has not yet seen her dentist.

Later, this same woman had a severe attack of muscular rheumatism, with much swelling. Epsom salt was the principal remedy, but gelseminine immediately relieved and finally entirely controlled the pain. Morphine was available, but she cannot tolerate that drug. These two instances seem interesting, as under ordinary circumstances I should have given morphine for temporary relief.

James E. Cosgrove.

Brooklyn, N. Y.

AN EPIDEMIC OF 45 CASES OF ACUTE INFECTIOUS ICTERUS

During the months of November and December, 1913, I had the unusual opportunity of seeing 45 cases of acute infectious (contagious) icterus. This epidemic was studied in a country practice, and 80 percent of the cases were confined to two public-school districts. Of the patients, 20 were males and 25 females. The youngest was 3 years, the oldest 40 years; 38 were between 3 and 15 years, while 7 were between 15 and 40 years of age.

Thirty-five of these cases developed with a sudden onset. There was a chill, or feeling of being cold, headache, furred tongue, anorexia, nausea and vomiting (or nausea only); abdominal pain, followed within twenty-four hours by a temperature ranging from 100 degrees to 104 degrees F.; pulse slow in comparison with temperature. In ten patients, most of whom were older, the symptoms developed more insidiously, with anorexia, malaise, headache or backache, or both, nausea, abdominal pain, and a temperature of 100 degrees to 102 degrees F. within forty-eight hours.

About ten, mostly children, showed cerebral symptoms but none had convulsions.

Abdominal pain, usually of a dull, annoying character, was a constant symptom in all, and this persisted for from three to seven days, and in some was so intense as to require sedatives.

Enlargement of liver and spleen was noted in a majority of the cases, and jaundice developed in every instance, usually on the

second day, but occasionally not until the third or fourth day, and this persisted from five to fourteen days. The cases in which jaundice persisted more than one week were all adults. The icterus was usually of mild degree, sometimes being so slight as to be difficult to recognize, while in a few it was intense. Pruritus was complained of in most cases. Light or clay-colored stools were noted in most cases and constipation was the rule. The urine showed bile in all cases in which the urine was examined.

About 75 percent of these patients recovered completely within one week, while the remainder, most of whom were adults, complained of some intestinal disturbance and weakness for several weeks. There were no deaths. The earliest diagnostic symptoms were abdominal pain or discomfort, and the constant slow pulse. With these two symptoms only, I should consider making a tentative diagnosis of jaundice until the case was further developed.

The treatment was largely symptomatic. Calomel and laxative salines were given, and refrigerants, when the fever was high and cerebral symptoms marked. Atropine and gelseminine controlled the abdominal pain best. Little, if any, food was taken during the first three days, then light diet was ordered.

Deductions

1. I consider acute infectious jaundice to be contagious rather than infectious and comparable with the other acute contagious diseases of childhood. This seems to be borne out by its sudden and uniform onset and course; from the fact that it affected mostly children; from its tendency to be confined to certain public-school districts; and from the fact that there seemed to be strong evidences of an incubation period of about two weeks' duration.

2. Acute bilious fever, acute infectious jaundice, autumnal jaundice, Weil's disease and other infectious maladies characterized by jaundice, are not distinct diseases, but rather, different types of the same infection, being modified by age of patient, by the virulence of the infection and season of the year.

GUY C. KELLER.

Dowling, Mich.

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[Epidemics of icterus are not uncommon, as an examination of the literature will show. Unfortunately, nobody seems to know positively just what causes them, perhaps because there are a number of causes. Weil's disease (which is an epidemic icterus, as Doctor Keller points out) has been ascribed to infection with the bacillus proteus, to paratyphoid bacilli, and to other organisms. It would have been interesting to make a study of the stools in some of the cases reported herewith. We urge our readers to do clinical research work of this kind on *all* these unusual cases.

Doctor Keller's treatment was excellent, although I should have been inclined to add to the remedies which he employed something to increase the flow of bile—as the bile-salts, chionanthus, or the salicylates—and probably hexamethylenamine (urotropin), in an attempt to sterilize the bile-passages. Bacterins should also be of value, especially in cases showing a tendency to persist beyond the acute stage. Cultures could be made from the stools, both for diagnostic and therapeutic purposes. What say our readers about these cases? The report is so interesting that it ought to excite comment.—ED.]

THREE CASES OF TRANSVERSE PRESENTATION

Probably a few readers of CLINICAL MEDICINE will remember my account, related some three years ago, of the difficulties encountered in a case of transverse presentation and placenta prævia. This lady is still residing out in a "pasture," fenced in all around, and about the only way to get there is to take some sort of aerial craft. However, by crawling through several fences and giving my trousers a few ugly tears, I have managed to get out to her home and deliver her of two more babies, making in all three transverse presentations in less than three years.

December 7, 1911, this lady was delivered after the strenuous efforts of another physician and myself. Result: Dead child, at full term. It died during manipulation.

February 25, 1913, another transverse presentation. This time, also, I had consultation with a neighboring physician and after considerable time and trouble, we managed to get mother and child separated. Result: Death of child at full term. It died during manipulation.

November 12, 1914, at 8 o'clock in the morning, I was again notified by the husband of this woman that "he thought" his wife was going to have a baby sometime during the day. About two hours later he returned, and requested me to come at once, since she was now having some awful pains. Upon arrival at her home, and on examining the

woman and finding, as I had suspected, another case of transverse presentation, I immediately hurried back to my office for some necessary articles which I had forgotten, and to call up another physician to assist me in the case.

I had hardly arrived at my office before the messenger reached me with the request to come back at once. I thought that perhaps the whole thing was over, and that the child might have been expelled in *conduplicatio corporis*, which we know will sometimes happen when the pains are strong and the fetus is macerated or very small. However, when I again arrived at the patient's house, I found everything *in statu quo*, only some of the neighbors thought the woman "would bust her womb" if such pains kept on much longer.

There indeed was no time to lose. The bag of water had ruptured several hours before, the shoulder was presenting at the cervix, and the pains were increasing in severity every minute, and without any result. There was no time now to call in expert counsel from afar—I simply had to knuckle down to business without further deliberation.

Shoving a rough board under the sagging mattress I got the woman over the edge of the bed and with two women supporting legs, I performed podalic version in less time than it takes to write it. The position was left scapula posterior, which probably accounts for the ease with which this was accomplished—not because of any particular dexterity on my part. Result: Delivered this baby alive at 12:15 p. m.—a strong, healthy girl, born at full time, weighing about 10 pounds. Placenta was delivered shortly afterwards, but with considerable hemorrhage. which was soon checked. The mother is making a rapid and uneventful recovery at this writing.

The position of the child in the first two deliveries was left scapula anterior, or in the left cephaloiliac position. The last delivery, as here related, was left scapula posterior, or in the dorsoposterior position. Some textbooks state that the dorsoposterior positions are easier to deal with, but I certainly have not found them so.

If the last case had been dorsoanterior, I could not have hoped to deliver this woman of a living child, or at least my experience with this woman and others would warrant this belief.

H. G. HENRIKSEN.

New Market, Minn.

[We need more of these live comments. Professor Rittenhouse has promised us some good papers dealing with the problems of the general practitioner in this field. They will begin in an early issue. But we want to hear *from the men in the field themselves*. Tell us your troubles; tell us your problems; tell us your successes; and tell us your failures.—ED.]

HEMORRHAGE CHECKED WITH EMETINE

One evening last week I received a hurry call from the Bronx to see a young woman said to be "bleeding to death." I found that the woman had been to a nose and throat specialist for an operation on the nose. After the operation she went home, and at 5 o'clock began to bleed, and kept it up until she lost a large quantity of blood. When I reached the patient's home, at about 7:30 p. m., her mother said: "I guess she is gone, Doctor. She tried some powder her physician told her to get from our druggist, and has used nearly a bottle of adrenalin, all without benefit."

I gave the young woman a hypodermic injection of emetine hydrochloride, and within three minutes the hemorrhage ceased entirely, and it has not returned. (While writing this letter the young woman's mother called me up to say that her daughter is all right.) Can you beat it? It is a great satisfaction to have such results.

P. DAVID SHULTZ.

New York City.

[We owe this letter to the kindness of Mr. Julian Heath, of New York, to whom it was addressed, and who very kindly gave it to us for publication. It will interest readers of CLINICAL MEDICINE to know that emetine hydrochloride is now being used for the prevention as well as the arrest of postoperative hemorrhage in nose and throat operations. We have been informed that Doctor Weinstein, of New York, is so employing it in his tonsillar work, and with very satisfactory results.—ED.]

THAT LIST OF INTERNAL-REVENUE COLLECTORS

In the editorial on the Federal Narcotic Law, this issue, we partially promised a list of the Collectors of Internal Revenue. We regret that we have been unable to get hold of such a list in time for this number. It is coming, and will be printed next month.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, *A. M., M. D.*

I AM always interested in the editorials in THE AMERICAN JOURNAL OF CLINICAL MEDICINE; they always have been to me one of the most attractive features of the periodical. I was especially interested in two in the November number, entitled "Thoroughness" and "The American Sanitarium's Opportunity." I am fully in accord with the sentiments expressed in the first-mentioned editorial, where it says: "The medical profession is *not*—there is no use blinking the truth—is *not* living up to the possibilities and obligations which the achievements of its own scientific workers have laid upon it. The average American practitioner is not doing as thorough work as he might. It is not that he lacks the skill or the means, or even, in a certain way, the will. It is just that habit of making shortcuts and of getting there quickly that is the curse of the American *temperament*."

In my work at Mudlavia, especially, have I noticed this lack of thoroughness on the part of a few physicians who have sent patients to me or who have been the "family physician" of patients who have been under treatment here. Not for a moment do I question the ability of the doctors to whom I refer, for many of them I know to be very competent men; however, many of them have failed to get into the cases as deeply as they should have done. For example, not long ago a gentleman came here, as he said, for the "baths." He told me that he had been ill for six or seven months and was getting worse rapidly. During this time, he had consulted six different physicians in a large western city, but had received no benefit. Before we gave this gentleman baths or instituted any line of treatment whatever, he was examined thoroughly, as is every patient who comes here for treatment.

Upon examination of his blood, we found that he had pernicious anemia. I told him that the baths would do him harm and suggested that he return to his home and have one of the physicians whom he had consulted take charge of his case. He replied that he did not want anyone of the doctors he had consulted, for *not one of them had made a thorough examination* of him, and that this was the first time he had ever had his blood examined. Now, I have not a doubt but that any one of these physicians could have made a diagnosis of pernicious anemia had he gone into the case thoroughly and examined the gentleman's blood. It was not a lack of ability, but a *lack of thoroughness*.

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I have had cases of tuberculosis of the joints and even of pulmonary tuberculosis sent to me for rheumatism, whereas a little more care on the part of the attending physicians would have enabled them to make correct diagnoses.

I believe that the people are now demanding more thorough examinations on the part of their physicians. The time has passed when anyone can succeed in the practice of medicine by merly asking his patient a few questions, looking at his tongue, and prescribing two or three kinds of medicine. Another thing that is demanded is greater discipline and more arbitrary treatment; in other words, the doctor should conduct the case as *he* wishes it conducted, and not allow the patient to conduct his own case.

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The other editorial referred to, the one entitled "The American Sanitarium's Opportunity," is especially timely. It is too true, as the editorial says, that the American sanitarium is too easy-going; that the inmates are regarded and treated as guests rather than patients. The average sanitarium reminds me much of a cafeteria where the patient helps himself to what he wishes.

In Europe, it is far different. There, the medical department of such an institution is supreme, and everything—baths, diet, exercise, medicine, all else—is rigidly and minutely prescribed by the medical staff; and the patients are held to these prescriptions with almost military discipline. The American who goes abroad and is treated in one of these European spas or sanitariums is

prepared to obey the doctor in charge. And he rather likes the discipline; moreover, here, in America, he resents it and wishes to conduct his own case.

I encountered this same trouble when I came to Mudlavia—which had formerly been a bath-resort—when I attempted to make it a strictly scientific medical institution. Many of the old guests (and they could justly be called *guests*) rebelled at the thorough initial examination which I required of every patient before taking any form of treatment. If they took baths, they themselves wanted to regulate their duration and the temperature, rather than to leave these matters in the judgment of the physician in charge. They wished to eat what they had been accustomed to eating, and rebelled at being placed upon a diet suitable for their special condition. Yet, these same people would have fallen into line without trouble at Carlsbad or at any of the other European resorts.

I am glad to say, however, that in the year and a half I have been at Mudlavia a great change has taken place. The old guests have been educated to the new order of things; they see the difference and appreciate the value of the change. Now the majority of the new guests come with the expectation of placing themselves entirely in the hands of the medical department and following directions implicitly. People have to be educated in these matters; and it is the duty of the physician, whether engaged in private practice or institutional work, to examine every patient thoroughly and to impress upon his mind the necessity of following the doctor's directings implicitly if he expects to get results.

I hope that I may be excused for thus speaking of personal matters, but the editorials referred to appealed to me so strongly that I feel justified in advertising these experiences of my own.

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Here are a few practical pointers which I have gleaned from various medical journals recently.

A. Orenstein lays down a regimen of hygiene and diet for the treatment of disease in the aged. He points out that the aged require less food of all kind, because they utilize less. Overfeeding, or rather a normal adult's ration, overtaxes their digestive powers and floods the blood with effete products which the kidneys and other emunctories cannot handle. Liberal drinking of water should be encouraged. Baths, which should be taken regularly, should be neither hot nor cold, of short duration, and taken preferably in the evening, when they conduce to a good night's sleep. Fresh air and exercise are indispensable. Clothing should be light, warm, loose, and of woolen material. The feet should be well protected.

Cathartics are the only class of drugs that are administered to the aged in larger doses than to middleaged persons; not with proportionate safety, however. General weakness is the complaint common to all. Since we have no specific against physiological old age, we must adapt our treatment to each individual. Codliver-oil in 1-dram doses is beneficial for some. Strychnine does good by stimulating digestive processes as well as the circulation. Alcohol, in the form of whisky, may be given in small doses, to stimulate the appetite. The treatment of disease in senility should be sonservative and without drastic changes in the mode of life.

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E. A. Rowland maintains that the duty of the practitioner of medicine is plain. By insistence upon required medical and surgical measures, he may exert an influence that will affect thousands in the years to come. The greater proportion of criminals and mentally deficient show evidence of hereditary syphilis or of uncinariasis, the toxins from which affect the mental and moral attitude as well as the physical condition. Also, the deficient oxidation caused by adenoids, hypertrophied tonsils, and turbinates affects the brain and the nervous tissues to the same degree that it does other structures; and, since brain and nerves are slowest in regaining normal tone, we may expect a permanent mental change that makes for mental deficiency and moral degeneracy. The great scope for improvement of the body, mind, and morals of the race in the hand of the physician of today is really wonderful.

Acute septic arthritis may occur by hematogenous infection, especially in infants of depressed vitality, and is analagous to the acute bone infections. The disease is at first limited to one joint and may go on to suppuration. The differential diagnosis from acute rheumatism is difficult at first, but the absence of immediate spread to the joints, besides the signs of suppuration, soon render the diagnosis clear.

In all stages of acute appendicitis in children, operation should follow immediately upon diagnosis. The signs and symptoms may be slight, while there are very serious conditions in the abdomen, and only surgeons

having a very wide experience may, in rare cases, be justified in waiting for convalescence before proceeding to operation.

In many patients having enlarged tonsils and adenoids, the temperature, if carefully taken at frequent intervals, will show an increase over the normal. Here, the explanation probably is to be found in a focus or foci of infective material.

In ensuring the diagnosis of tuberculous joint, the tuberculin tests of Calmette or that of von Pirquet may be applied, or an injection of Koch's old tuberculin may be given, which, in tuberculous cases, gives a reactionary rise of temperature within twenty-four hours.

A good food for sick babies is buttermilk prepared by adding about 40 grams of sugar and 15 Grams of flour to 1 liter and boiling ten minutes. It has a low fat content and lactic acid as a valuable ingredient.

Primary pneumococcal peritonitis in children runs a comparatively benign course, which cannot be said about streptococcal infections.

Remember Bazin's disease when a girl at the age of puberty presents herself with a round, deep ulcer on the calf of the leg.

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In the thread test for gastric acidity, Schwarz uses a solid gelatin capsule containing a heavy powder giving a neutral reaction. The capsule is pierced and a thread drawn through it which has been soaked for half an hour in a 0.25-percent aqueous solution of congo-red. The thread is 120 cm. long and, after being passed through the capsule, is tied over it. This capsule is swallowed half an hour after a test breakfast, the free end of the thread being held with the hand. After fifteen minutes the thread is drawn out, the capsule having dissolved in the stomach in the meanwhile. The end of the thread which has been in the stomach is now dark-blue or violet, proportional to the amount of hydrochloric acid in the stomach content. If the thread still is red, this shows anacidity or that the capsule has stuck somewhere on its way. By this simple means, the condition in regard to gastric acidity can be determined without inconveniencing the patient.

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In *The Urological and Cutaneous Review*, I find the following dermatological hints:

In all cases presenting an intense itching, unless they are of parasitic origin, it is very important to examine the urine carefully, as frequently diabetes or nephritis are present.

Tar should not be employed over wide areas of the skin, since very acute poisoning may result. The scrotum, axilla, and face are most sensitive to the action of tar.

It should never be forgotten that the proper preparation of a salve in skin diseases is of as much importance as the choice of its ingredients.

One should always remember that the action of a drug differs in intensity in the various forms of salve, paste or lotion.

Make it a routine practice to examine the mouth of every skin-patient, for it often happens that interesting mouth lesions exist, unsuspected by the patient.

In a stubborn leg ulcer, it is well to try the effect of zinc ionization before condemning it as "chronic."

To make Lassar's paste less sticky, it may be mixed with an equal part of lanolin.

Sea bathing, though often contraindicated in cases of eczema, may generally be safely indulged in by the psoriatic.

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Small doses of arsenic (gr. 1-60) given in granule form in connection with some vegetable bitter like quassin, every hour for a few doses, acts almost as a specific in gastralgia and enteralgia.

In a case of surgical shock where there is danger of the patient passing into a state of collapse, medicines must be given that increase the systole of the heart, such as alcohol, brandy or ammonia. If there is time, that is, no immediate danger of collapse, in surgical shock, then morphine is the medicine of medicines; so that in many cases it is good practice to give morphine with alcohol, for instance. where there is no fear that the patient is going to sink too suddenly. Medical shock is produced by all injuries to the abdomen and the abdominal viscera, and produces the same effects as in surgical shock. Thoracic inflammations do not tend to produce shock, but the reverse, there being exaltation of spirits, and so on, as in phthisis.

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When you have a rapid heart and an increasing nervousness, do not pass it lightly by as a "nervous-heart case." Look carefully for other signs and symptoms of hyperthyroidism such as tremors, dyspnea and ophthalmos. Do not wait for a marked thyroid enlargement but endeavor to get your patient to consent to early surgical treatment for a condition that is unquestionably surgical.—*MacKechnie.*

Among the Books

GIBSON: "THE POSTMORTEM ROOM"

A Handbook for the Postmortem Room. By Alexander G. Gibson, M. D. (Oxon), F. R. C. P. (Lond.). University Demonstrator in Pathology, Oxford, England. New Yerk: Oxford University Press. 1914. Price $1.50.

Postmortem examinations, as the author points out in his preface, are made with three objects: first, to lay bare the results of the disease, so as to verify or determine the cause of death; second, to observe the processes of disease; third, to acquire skill and judgment in postmortem work, the better to enable the student to interpret what he sees in life and in death. The first of these purposes concerns the physician; the second, the pathologist; the third, the medical student.

It is for the furtherance of the third object that this little hand-book is designed. The methods dealt with are intended to cover the technic of all ordinary postmortems that are likely to be undertaken in a general hospital. Rare cases, and exhaustive details, have been omitted. The methods described are those in use in the Radcliffe Infirmary, Oxford, where the author does his work, and are based, for the most part, upon the methods of Virchow as practiced in most of the great schools.

The arrangement is excellent, since it insures, if faithfully followed out, a sequential exposure of the various tissues and organs, so that they are seen in all of their internal relations before being excised or displaced. The book is, in fact, a capital little manual for autopsy work.

PRACTICAL MEDICINE SERIES

The Practical Medicine Series. Under the Editorial Charge of Charles L. Mix, A. M., M. D. Volume II, Series 1914. General Surgery. Edited by John B. Murphy, A. M., M. D., LL. D., F. R. C. S. (Eng.), F. A. C. S. Chicago: The Year Book Publishers. Price $2.00.

In this year's review of surgery will be noted the report of a great variety of new methods of anesthesia and analgesia, with a goodly number of cases recorded in each, with fairly satisfactory results. Singularly enough, however, the greatest change in the surgical situation has come about, not through surgical channels at all, but by way of medicine. The rapid and ever-increasing use of serums and vaccines, and the more specific cultures of the autogenous products, furnishes the most striking innovation in the surgery of the past year or two. In other words, the biologic spirit has invaded surgery, just as it has invaded medicine, and is changing the face of the surgical map.

Next in importance, the editor thinks, the advance in thoracic surgery and the improved technic and results in nerve anastomosis must be given consideration. These remarks do not, of course, convey any idea of the scope of the volume, which includes a review of practically all that has been "doing" in surgery in the past year.

ANDERS-BOSTON: "MEDICAL DIAGNOSIS"

A Textbook of Medical Diagnosis. By James M. Anders, M. D., and L. Napoleon Boston, M. D. Second edition, thoroughly revised. With 500 illustrations, some in colors. Philadelphia and London: The W. B. Saunders Company. 1914. Price $6.00.

There could not be found any better-adapted team to write a textbook of diagnosis than Doctors Anders and Boston; and the result of their joint work is, as one naturally would expect it to be, a well-balanced presentation of the clinical and laboratory phases of the subject. "A broad conception of the subject of diagnosis recognizes both clinical and laboratory methods and regards them as being equally important in the investigation of disease." Such is the authors' avowed declaration of principle in their preface; and this is carefully carried out in the content and arrangement of the book.

Naturally, the greater part of the revision and addition represented in this new edition refers to laboratory diagnostics. In this respect, the book is brought closely up to date, including such things as the cobra-venom reaction in syphilis, the Dohle bodies in

scarlatina, albuminous sputum, and so on. But it must not be supposed that the progress of physical diagnostics is neglected. Clinical tables have been added on several important subjects, and the sections on blood pressure and Stokes-Adams disease virtually have been rewritten.

Altogether, this is one of the most complete and efficient works of its kind that we ever have had the pleasure of examining, and it ought to be well thumbed by the conscientious doctor who is interested in making a thorough diagnosis.

HARE: "PRACTICAL THERAPEUTICS"

A Textbook of Practical Therapeutics. By Hobart Amory Hare, M. D., B. Sc. Fifteenth edition, enlarged, thoroughly revised, and largely rewritten. With 144 engravings and 7 plates. Philadelphia and New York: Lea & Febiger. 1914. Price $4.00.

The fact that fifteen editions and numerous reprintings have been called for since this book first appeared in 1890 is sufficient evidence of its popularity and usefulness. The author also states that it has served to stimulate his endeavor to maintain this useful character and to keep the book up to date. The physician not only wants to know what drugs can do good and how they do good, but he also wants to know how to use them and when to use them so that they will do good; in other words, he wants the facts reached by scientific investigation placed before him in such a way that the treatment he undertakes will be rational and well foundationed. If any measure has proven useful, even though its rationale has not yet been thoroughly explained, he wishes to have the available clinical data of such a measure also placed before him.

These things have been borne in mind by Doctor Hare in the preparation of the present text. He has gathered together what is new and has tried it in his own work, where possible, and has carefully analyzed the work of others, so that the actual value of a procedure can be arrived at; and this information he has placed before the reader. Many articles have, of course, been added to this new edition, all of which are dealt with in a judicial and unbiassed manner.

ADAMI AND McCRAE: "PATHOLOGY"

A Textbook of Pathology for Students of Medicine. By George Adami, M. A., M. D., and John McCrae, M. D. Second edition, revised and enlarged. With 395 engravings and 13 colored plates. Philadelphia and New York: Lea & Febiger. 1914. Price $5.00.

Perhaps in no branch of medical science has there been, during the last few years, such a bewildering multiplication of observed and observable facts as in pathology. Hence, the necessity for classifying and correlating these facts, so that they may not fail of their application to the concrete clinical side of medicine. And this work of classification and correlation is splendidly achieved in the classical work of Adami and McCrae. But that which, above all, makes their textbook supremely valuable is the continued emphasis that is placed upon the reasons underlying pathological conditions. As the authors themselves wisely say: "The ability to recognize individual pathological phenomena is of prime importance, but the power to grasp the meaning of the general laws according to which tissues act and react is paramount." If all of our teachers of pathology would govern themselves by this excellent principle, what a breadth of significance and what a range of usefulness it would give to the subject! Then, indeed, pathology would have its perfect work.

Much has been added to the present edition, including a new chapter on the more important infections and their prominent features, a presentation of the recent work on toxins and the effect of "split-products" in causing disease, being 93 new illustrations, 2 of which are colored plates. The volume is completely cross-indexed.

NEEF: "SURGICAL PRACTICE"

Guiding Principles of Surgical Practice. By Frederick Emil Neef, B. S., M. D. New York: The Surgery Publishing Company. 1914. Price $1.50.

In the practice of an applied science and art such as surgery (for, no one, we think, will deny that surgery is an art as well as a science), nothing is so important to success as system; nothing so weakens confidence and annuls results so much as aimless puttering. Just as every man who thinks must have some philosophy of life, so every man who is engaged in any sort of scientific or artistic work must have a philosophy of his activity; that is to say, an orderly, sequential, coherent set of principles, not necessarily to enslave him to an iron-clad rule of procedure (that is not at all desirable), but to serve as the guiding basis for all that he does.

This, we take it, is the motive of Doctor Neef's little manual. There is no doubt that the general surgeon will find it invaluable as a book of reference in the basic sense as here outlined. Not least among its excellent features is the very full index with which the author sensibly has furnished it. Many books of this character lose half, sometimes almost their entire value through an utterly inadequate index. Doctor Neef has amply provided against this loss.

WILLIAMS: THE QUESTION OF ALCOHOL

The Question of Alcohol. By Edward Huntington Williams, M. D., formerly Associate Professor of Pathology, State University of Iowa. New York: The Goodhue Company. 1914. Price $0.75.

But yesterday, and alcohol might have stood against the whole world as a therapeutic agent. Now none so poor as do it reverence. We venture to say that of modern physicians not one in a hundred carries alcohol in his armamentarium, except in the form of a solvent for tinctures and fluid extracts, or for outward application only. Of course, our prohibition friends take to themselves a great deal of credit for this change in the situation. And it would, in fact, be strange if their enthusiastic propaganda had not made some impress, even upon the medical profession. But the real factor in the decline of alcohol, both as a medicinal agent and as a beverage, has been the careful observations and the cold, unprejudiced reasoning of thoughtful, scientific men. One by one, the physiological fallacies which have bolstered its use have, under the light of modern knowledge and research, been disproven and discredited by the application of reason and the showing of fact.

Far from an expression of fanaticism, the modern view represents the application of sound common sense. Alcohol has been ousted from its status, not by the extravagant accusations and phillipics of fanatics, but by the calm, searching investigations of disinterested science and by its deliberate, dispassionate conclusions.

All of which we commend to the attention of the author of this little book; for we fear that he has failed to give it careful consideration. Doctor Williams may be right as to the inefficacy of mere coercive prohibition to do away with the alcohol evil; and we concede that a great deal of hysterical exaggeration has been indulged in by the temperance enthusiasts. But he has certainly failed to read aright the signs of the times if he has not observed that these are not the real forces at the back of the anti-saloon movement of the last few years. Doctor Williams' proposed remedies for the saloon evil—which amount to a system of taxing vice to promote virtue—may be unassailable as a proposition in academic psychologics, but, unfortunately for their practical soundness, the remedy has already been set in motion, and it is of quite another character. The saloon must go!

LOWRY: SEX TEACHING IN SCHOOLS

Teaching Sex Hygiene in the Public Schools. By E. B. Lowry, M. D., Author of "Herself," "Himself," etc. Chicago: Forbes and Company. 1914. Price $0.50.

In a recent article upon the etiology and prophylaxis of scoliosis, with special reference to the influence of postural errors, Doctor Badin, the distinguished French pediatrician, pertinently remarks that if the public schools would earnestly and intelligently cooperate with the physician, instead of being, as they are today, the breeding place of spinal curvature, they might be made veritable centers of prophylaxis against it—which, he significantly adds, would be no more than right, since the schools have been such potent factors in bringing about the hereditary tendency to scoliosis.

The same thing, I think, might well be said, with equal truthfulness, concerning sex hygiene, both physical and moral. Without systematic instruction in sex matters, the public schools are hot-beds of vicious misinformation and morbid eroticism; with a frank and intelligent profession, they might well become, in Doctor Badin's language, "veritable centers of prophylaxis."

This is the burden of Doctor Lowry's little preachment; and we heartily agree with her. She herself has done her part—and no small part—in the wholesome promulgation of the truths of sex, and is therefore entitled to speak with some degree of positiveness, not to say authority.

We urge physicians everywhere to read Doctor Lowry's book carefully, and then to appoint themselves each a committee of one to see to its being carried into practice within the sphere of his professional influence.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6063.—"Referred Pain in Heel." J M. T., Nebraska, writes:

"I have a patient, a man 80 years old, quite heavy, a hearty eater, who for six months has had a pain on the under side of his right heel, which hurts worse when he is sitting down than when up and about. The sore spot is about the size of a dime. I have used the clean-out method, anti-rheumatism combination, and antacids, until I have been fearful of the dosage; but nothing helps. Salt-baths and other measures have been tried."

Of course, it is impossible, without our having a clearer idea of local and general conditions, to express a definite opinion as to the cause of the pain in your patient's foot. Do not forget, however, that very frequently pain in the heel or ball of the great toe, especially of a sticking character, is caused by prostatic hypertrophy. Many patients say that the sensation is that of a peg of wood being driven into the deep tissues. The fact that the pain is worse when he is sitting down leads us to believe that in this instance it is referred and of prostatic origin.

Let us suggest that you examine the man's prostate gland thoroughly. At the same time see whether pressure upon the painful area increases distress. If there is any local inflammation, applications of guaiacol, methyl salicylate, and iodine, besides hot epsom-salt sponge baths probably would prove beneficial. You might also give macrotoid, bryonin, and colchicine, in alternation with other rheumatic remedies. Do not forget saline purgation.

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QUERY 6064.—"Gastric Lavage." W., Georgia, desires full information as to how to proceed when using the stomach-pump in a case of poisoning.

To wash out the stomach is such a simple matter that it hardly seems necessary to describe the process in detail; furthermore, the procedure is fully outlined and illustrated in virtually every modern work on minor or emergency surgery. The plain stomach-tube, with funnel attached, is preferred by this writer to the kind provided with a suction-bulb and called stomach-pump.

Have the patient sit on a stool or straight-backed chair, with his head thrown backward, so as to bring the mouth-cavity and gullet as nearly as possible in a straight perpendicular line, without straining, and muscles relaxed. The tube, having been washed out with warm water and the end lubricated with glycerin mixed with an equal measure of water, or with glycerole of starch (fats and petrolatum quickly ruin the rubber) is gently passed with the right hand directly back to the pharynx, the index-finger of the left hand guiding the point of the tube over the epiglottis; it is then pushed gently downward into the stomach, up to the white or black ring-mark 22 inches up. As a matter of fact lubrication is rarely needed, the esophagus being normally well "oiled." If any obstruction is encountered, the tube should be withdrawn a little and then pushed gently downward again. The patient (if conscious) should be instructed to swallow from time to time, when simultaneously the operator pushes the tube. All manipulations must be made without the employment of any force whatever.

Three kinds of tubes are in use, namely: (1) the plain stomach-tube; (2) the tube with bulbs in the middle, by pressure upon which it is possible to draw out the contents of the stomach, the proximate, or free, end of the tube being lowered into the receiving-vessel; (3) the stomach-pump proper; consisting of a syringe connected with two tubes, one at the end (nozzle), the other at the side. The passage of fluid through the nozzle is regulated by a valve controlled by a lever.

The nozzle of the pump is attached to the stomach-tube already in position, while the end of the other tube is placed in a pan of warm water. By withdrawing the piston and opening the valve, the water is drawn from the basin; by closing the valve and depressing the piston, the water is forced into the stomach. When a sufficient quantity has been injected (in an adult, ordinarily about a pint), the action of the valve is reversed and the fluid drawn out of the stomach and discharged through the lateral tube into the basin. This process is continued until the wash-water returns clean.

Other apparatus for washing out the stomach can be procured, but the straight tube with funnel ordinarily proves very satisfactory, and such a one always should be in the doctor's satchel, ready for use at any moment. When "stomach washing" is essential, speed many times is not any less so. In this connection, see Candler's article on "Emergencies of General Practice," printed last year in CLINICAL MEDICINE.

If possible, get some fellow practitioner familiar with the procedure to introduce the tube in your presence; then experiment upon your own person. You need not necessarily empty your stomach or throw in any water, but at least pass in the tube. The revered gentleman who taught this writer much of what he knows about internal medicine insisted that none of his students should use the stomach-tube upon a patient until he had successfully accomplished gastric lavage upon himself (and he was right!) and also had repeatedly performed the maneuver satisfactorily upon a classmate. The delicacy of touch developed by this method was astonishing. Incidentally, precisely the same rule applied in catheterization; yes, and we boys often indulged in speculations as to what might have happened had this good professor held—the chair of applied obstetrics!

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QUERY 6065.—"Adenitis and Glandular Fever." E. T. S., Ohio, desires information concerning glandular fever, or inflammation of the cervical lymphatic glands. "I have," he says, "these cases in children as well as in adults. In one case (adult), there is no fever, no sore throat, just a swollen cervical gland. Another, a child 5 years old, had tonsillitis, and a few days later the glands became swollen, and the edema has now extended half-way around the neck. At the same time the bowels became inflamed and the abdomen tympanitic; the temperature was between 101° and 104° F. The glands still are very hard. Will anything used locally be of value? What would be the best internal treatment? Will any treatment avoid lancing the gland?"

There is, as you of course are aware, a wide difference between glandular fever and adenitis. You say, "in one case, no fever, no sore throat, just a swollen cervical gland." This would appear to be a simple adenitis.

In glandular fever, the temperature usually runs high, tonsillitis may or may not accompany or precede the condition, but almost invariably the patient feels feverish, complains of pain in the throat and about the jaw, and within twenty-four hours swelling of the submaxillary and cervical glands occurs. The head is moved with difficulty, and the indurations may be slightly or decidedly painful. The fauces appear reddened and edematous in eight cases out of ten. Vomiting may be present, or, where absent, there is likely to be diarrhea. Not infrequently a more or less marked anuria ensues. All of these symptoms may appear and recede within three days. Of a series of cases treated by the writer, only one ran over the fifth day. In exceptional instances, the symptoms persist, the fever fluctuates, the glands remain swollen, and cough develops.

A full description of the disorder and outline of treatment will be found in "Everyday Diseases of Children" (second edition). The chapters on the treatment of acute and chronic adenitis should also be studied.

As a rule, acute adenitis appears after bronchitis, pharyngitis or other localized inflammation. In nine out of ten cases, the cervical glands alone are affected and the inflammation may subside (as it will under treatment) or go on to suppuration.

In the chronic form, the glands are hard, and no systemic disturbance is apparent. Eczema, a chronic sore or a decayed tooth may set up the condition. Suppuration here is improbable. It is not always easy to exclude tuberculosis, but careful observation should lead to a positive diagnosis.

In acute adenitis, give small divided doses of calomel and irisoid, every night for three days, and a full dose of magnesium sulphate the next morning; calcium sulphide, phytolaccoid and rumicoid, 1-6 grain of each, four times daily; with calcidin, mercury biniodide and nuclein (dose according to age) thrice a day. The toilet of the nares, buccal cavity, and pharynx must be carefully attended to. Morning and night inunct over the affected area, 15 grains of unguentum Crédé (colloidal-silver ointment), and apply a compress wrung out of a saturated solution of epsom

salt. In some cases, especially if suppuration is inevitable, hot compresses prove preferable.

The 5-year-old boy probably had glandular fever. You will observe ("Everyday Diseases of Children," p. 239) the statement that "retroperitoneal involvement may occur and be evidenced by pain upon deep pressure." The treatment already outlined proves effective, but it is desirable to give additional doses of nuclein, 10 minims being dropped under the tongue twice daily.

Juglandoid exerts a peculiar action upon glandular structures and is particularly useful in true glandular fever. It may be given with or in place of rumicoid. Gelseminine hydrobromide is, unquestionably, the best direct remedy for hyperpyrexia.

Recently we have used iodine, grs. 2; ichthyol, oz. 1; glycerin, ozs. 3, locally, with satisfaction.

If you have a file of CLINICAL MEDICINE, see the answer to Query 5861, November, 1912. As is there pointed out, tuberculous and syphilitic adenitis must be recognized and treatment for the basal condition be instituted. In tuberculous patients, guaiacol is of benefit, locally as well as internally.

As you may be aware, in the fall of 1912 and spring of 1913, a peculiar and widespread epidemic of adenitis prevailed. Several hundred people in Cook County alone were affected, and physicians from all parts of the country wrote us inquiring as to what was causing the enlargement of the cervical glands in so many children. Investigation proved that virtually all these cases occurred in neighborhoods in which an epidemic of roup had occurred among poultry. In consequence, this writer advanced the opinion that the organism responsible for roup in fowls was the cause of the epidemic of adenitis. In not a single instance did suppuration occur, although, unfortunately, several children treated by oldfashioned methods died.

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QUERY 6066. — "Favus or Tinea Decalvans?" A. J. D., Oklahoma, is treating a little girl ten years old who has always been healthy, excepting for enlarged tonsils and adenoids, which were removed when she was about six. About the 1st of September, her eyelashes began to break off, leaving them short and stubby, and a little later they came out entirely; in a few weeks, her eyebrows were similarly affected, and now for three or four weeks the hair around the forehead and in spots all over her head has been breaking off, leaving it about an inch long. The eyebrows and lashes will start to grow anew, but when they get just long enough to be seen they drop out again. Close examination reveals just the slightest inflammation on both eyelids and brows. Our correspondent has been unable to find anything in his textbooks that gave him much light on the subject, and he requests assistance.

Unfortunately, it is impossible, with the data submitted, to venture a positive diagnosis. The condition described may be either favus, seborrhea or folliculitis decalvans.

In tinea decalvans, the eyelashes, eyebrows, and scalp may be involved. Occasionally the only precursory symptom is a slight irritation or insignificant itchiness of the affected area, although in some instances headaches, pruritus, burning or other manifestations of disturbed innervation are observed. If you have access to Stelwagon's "Diseases of the Skin," consult the chapters descriptive of the diseases named.

Atrophy of the hair may be owing to the invasion of parasites in the hair or about the hair-roots, or it may result from some known or unknown systemic condition from which the hair may suffer nutritive starvation and become weakened and fragile.

We suggest that you secure and forward to the laboratory a specimen of urine (4 ounces from the 24-hour output, stating the total quantity voided), and also some hairs plucked fron the affected areas, besides a scraping from the skin. The latter should be placed on a slide and protected with a coverglass.

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QUERY 6067.—"Purulent Salpingitis?" J. L. Y., Kentucky, reports the case of a woman thirty-six years old, now eight months pregnant, who for two or three years has had what he diagnoses as pyosalpinx on the right side. Symptoms: slight fever, intense pains and cramps; then an intermittent vaginal outflow of mucopurulent offensive discharge. Relief of pain is secured only from the hypodermic use of dangerously large doses of morphine. Operation was insisted upon, but refused, one and one-half years ago. The patient now says that she will submit after the child is born. Reasons for diagnosis: (1) Can feel (and see) enlarged tube when full; (2) blood, pus and mucus are discharged (at intervals) from uterus and vagina. The blood pressure is 118 M., systolic; specific gravity of urine, 1030.

The Doctor asks: "Can you form a diagnosis? I fear that during labor she will reinfect herself. What can I do to prevent such reinfection? Would you advise some of

the vaccines; if so, what kind and when should it be used?"

We are inclined to confirm your diagnosis, but are at a loss to understand how there can be an "intermittent outflow of mucopurulent offensive discharge" from a pregnant uterus if the fetus is viable. Are you sure the "blood, pus and mucus" does emanate from the os? Is this woman a primipara?

In the chronic form of purulent salpingitis, sterility is usual, for, even though only one tube is involved, an endometritis almost always coexists. In old cases of pyosalpinx, extensive adhesions are the rule. These may be so formed that closure of the fmbriated extremity of the tube is so secure that there is little danger of purulent material escaping into the peritoneal cavity; but, as you will readily realize, during labor such rupture might occur and cause a general peritonitis, which would almost inevitably prove fatal. It may be possible to drain the pus-sac through Douglas' cul-de-sac. This simple operation could be performed at once, thus saving the woman grave danger during delivery.

The mere administration of bacterins would not meet the immediate requirements, though, after delivery, an autogenous or appropriate stock bacterin could be used with advantage.

By all means, cut down the morphine, substituting for it, if an anodyne is absolutely essential, the smallest possible dose of hyoscine, morphine, and cactoid.

The blood pressure is fairly satisfactory; the specific gravity of the urine, considering the circumstances, is not abnormally high.

Of course, we are not cognizant of the exact conditions which obtain at the present moment. Is the tube now distended? Have you been able to discover any pus in the urine or feces? Are you quite positive that the discharge during the last few months has been from the uterus?

If you have access to a copy of Ashton's "Gynecology," read the chapter on purulent salpingitis; then, with your memory refreshed, examine your patient and give us a clear clinical picture. Do not forget the possibility of the sac being adherent to the rectum. The "extremely offensive odor" of the discharge would lead us to believe that such a condition obtains. In many chronic cases, the pus is sterile, but reinfection from the bladder, intestines, and so on may occur at any time.

As the patient usually suffers materially from the long-continued purulent drain, an examination of the blood might prove informative.

Unless you drain, it would be advisable to have the woman delivered in a hospital, with everything prepared for immediate laparotomy. If you can present more complete data, it will give us great pleasure to aid you to the extent of our ability. Do not hesitate to call on us at any time.

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QUERY 6068.—"A Peculiar Paralysis." C. F. S., Guatemala, describes the case of a woman who some time ago was "taken with a severe stroke, apparently paralytic." The woman was of a nervous, jealous temperament and with her sharp tongue drove her husband to other women. "She was," our correspondent relates, "asleep when the attack (seemingly caused by a lesion in the central nervous system) occurred, the power of speech leaving her instantly, the entire left side of the body being paralyzed and her lower jaw dropping. Under treatment of other physicians, hypodermic iodine injections predominating, she is improved, the only symptoms being her inability to speak, barring a few simple words, and to write or to read more than a few words. The tip of the tongue is the only part of the member controllable. She eats and sleeps better than before her illness. All the other functions of the body are normal."

Some years ago, the Doctor had treated this woman's husband for chancres, and therefore assumed that the wife has a syphilitic affection; but the antisyphilitic formula and neuro-lecithin given for two months had no effect. She is now on chromium sulphate, 4 tablets a day.

With the limited clinical data before us, it is, as you will readily understand, out of the question to venture a diagnosis. Considering the highly nervous temperament of the woman and the real or fancied provocation she received from her husband, it is well to consider the possibility of a hysterical element. We should anesthetize the patient and see how many of the symptoms disappear during anesthesia and the recovery of sensibility; also test electrical reactions.

You do not state the patient's age, neither do you present any information relative to muscular conditions. Is there any atrophy, especially of the facial muscles on the affected side?

You state that the woman was stricken while asleep, the power of speech leaving her instantly. How (unless the woman talked in her sleep) could they possibly tell

when the attack really did occur or that inability to annunciate came on "instantly"? Are we to assume that when stricken the woman awoke and in some way summoned assistance, or was she found in the morning paralyzed and unable to speak? Investigation probably would show that the woman retired in a high state of excitement, after a "scene" with her husband, and was found paralyzed the next morning.

The possibility of the existence of a luetic lesion must be considered, in view of the husband's known syphilitic taint. It would be well to have a Wassermann test made. The fact that under injections of iodine (in what form was the drug so given?) conditions have improved tends to support the suspicion of syphilis.

You say, "the tip of the tongue is the only part of the member controllable." Is the rest of the organ furrowed or wasted? Is it drawn to the affected side? Are the few words the woman is able to speak clearly articulated? Is there exophthalmos? Search for and outline diagrammatically, if you will, anesthetic or paresthetic areas. Has the urine been examined?

In embolism, while there is a sudden onset, with hemiplegia, the loss of consciousness is temporary only, and fever develops after a few days. In thrombosis, prodromata usually are observed, although the onset may be sudden and come on during sleep. There may be various cranial nerve paralyses, with headache if syphilis is present. There is usually more mental impairment in thrombosis than in embolism. Embolism generally occurs between the ages of twenty and fifty, and is more frequent in women. Predisposing causes of thrombosis may be, among others, fatty heart, blood dyscrasias, syphilitic or gouty arthritis.

We trust that you will be able to make a thorough examination of the patient, for, with more definite data before us, we may be able to aid you to arrive at a diagnosis.

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QUERY 6069.—"Harmless, Nonhemolytic Saponin." V. G. A., Illinois, requests specific information regarding the means by which saponin is rendered harmless, or detoxicated, as lately mentioned in these pages when that substance (soapbark, sarsaparilla, and so on) is to be used for foam-making in soda-water.

The information desired is not, unfortunately, at our command, and we can merely state that saponin owes its hemolytic property to its affinity for fat-bodies, with which it unites. Thus, the erythrocytes are protected by an involucre containing lipoids, but when these are dissolved out (by saponin) the salt elements of the serum penetrate into the cell and cause its rupture.

Consequently, then, if saponin is first saturated with a fat, its affinity for the liquids of the blood-cells has been neutralized; and upon this fact rests the process of detoxicating this poisonous glucoside, cholesterin being the most suitable lipoid for the purpose. (Lecithin also would serve.) However, saponification with a barium of an alkali hydrate also enters into the process. Incidentally, cottonseed (or other) oil constitutes an immediate antidote to saponin poisoning.

Full information may be obtained from a monograph (German) by Dr. Joseph Halberkann, a reprint from the *Deutsche Mineralwasser-fabrikanten-Zeitung* (1912, Nos. 25 to 30), and published by Hugo Herm. Mattner, Leipzig, Germany.

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QUERY 6070.—"Warty Facial Growths." "I have a patient," says J. M. I., Indiana, "who is troubled with warty growths on his face. In the center of each wart there is a hair, as a rule. These excrescenses have been treated, but almost without exception they return. What can be the immediate cause? He had them for several years and claims to have become infected in a barber shop. I cauterize them with phenol, but sufficient time has not elapsed since doing so to know the eventual result. Can you suggest a cause, also suggest treatment?"

After careful consideration of the limited clinical data presented, we are inclined to believe that your patient suffers from keratosis pilaria, or possibly lichen pilaris, a somewhat similar malady, if not, indeed, a mere variety of the former. We take it, of course, that syphilis can be excluded. In lichen planus, there is pruritus and also local inflammation. Crocker states that lichen pilaris rarely, if ever, attacks the face and upper part of the chest. In acne sebacea or cornea, the lesions are not conical. Those observed in keratosis follicularis usually appear first upon the head and face, later, when pronounced and increased in size, they assume a greasy or sometimes a dry, firm, brownish appearance; are semiglobular in shape, and vary in size from a small to a large pinhead. Closely examined, they are found to contain a hardened mass or plug.

In keratosis pilaris, conic, slightly acuminate or flattened papules, the size of a pinhead and of a whitish, grayish or dark-gray color,

are situated at the outlets of the hair-follicles, from which they project. Each papule is pierced by a hair, usually broken off at the apex, but sometimes coiled within the papule. These excrescenses are hard, harsh and dry, as is the intervening skin.

We exclude tinea barbæ, of course, as you speak of warty growths.

If you will give us a clear clinical picture, doctor, we shall be able to help you more intelligently. Together with the clinical data, you might send a good photograph, showing the lesions plainly.

Meanwhile, place your patient upon the triple arsenates with nuclein and a highly nutritious diet, with some effective digestant before meals. Secure thorough elimination; wash the skin with carbenzol soap and hot water; withdraw the central hair (if the lesions are not too many) or plug; or, better still, incise the growth with a sharp bistoury, then swab with *pure* carbolic acid, using a toothpick, and neutralize in one minute with strongest grain-alcohol. Then direct the patient to apply daily a solution of sodium bicarbonate or sodium borate, and supplementary applications of a salicylic-acid ointment, 10 grains to the ounce of petrolatum and lanolin.

If you have access to Stelwagon's "Diseases of the Skin," or to Crocker's, read the chapters on keratosis, lichen planus, etc.

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QUERY 6071.—"Caustics for Removing Warts and Moles." G. S. C., Georgia, wants information regarding the socalled dermal caustic. He has been told that monochloracetic acid would remove warts and moles, but cannot find that particular acid indexed, although he sees trichloracetic acid mentioned. He wishes information about either or both, and about their uses.

The dermal caustic referred to (a solution of sodium ethylate), when properly applied, will destroy blood-filled growths without resultant scarring. The area to be treated should be wiped with alcohol, dried, and the surface moistened with the dermal caustic (applied with a glass rod). After a moment, the superfluous fluid should be taken up from the lower edge of the growth with a piece of blotting paper. A black eschar forms. The application may be repeated at intervals until the growth is destroyed.

In the application of this preparation, caution must be exercised. Do not try to do too much at one sitting. Get the full effect of the first treatment (which often will be more than one thinks, even in the case of large growths), before you apply the second. The red surface left after treatment often will disappear, with contraction of the capillaries. As the black scab begins to separate, keep the part well oiled, to avoid contraction or pitting.

Monochloracetic acid presents a very deliquescent, colorless, crystalline mass, melts at 63° C., is soluble in water, caustic, and is used in the form of a concentrated solution to destroy warts, corns, and so on.

Trichloracetic acid also occurs in the form of deliquescent colorless crystals, it has a pungent, suffocating odor, is very caustic, and is used as an escharotic, astringent, and hemostatic. It is recommended as the best remedy for removing warts, and similar growths from the nose and throat particularly. As an escharotic for corns, warts and so on it may be used pure or in very concentrated solution; as a hemostatic and astringent, in 1- to 3-percent solution.